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CALIENTE DRAFT WILDERNESS ENVIRONMENTAL IMPACT STATEMENT

United States Department of the Interior
Bureau of Land Management
Las Vegas District Office
Las Vegas, Nevada

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United States Department of the Interior

BUREAU OF LAND MANAGEMENT

1792/8500
(N-053)

Nevada State Office
300 Booth Street
P.O. Box 12000
Reno, Nevada 89520

SEP 19 1984

Dear Reader:

Enclosed is a copy of the Draft Caliente Wilderness Environmental Impact Statement (DEIS). The DEIS analyzes the effects of designating or not designating all or portions of five Wilderness Study areas (WSAs), totalling 588,423 acres, in southern Lincoln and northeastern Clark Counties, Nevada. The goal of this analysis is to recommend for wilderness designation those areas where wilderness is determined to be the most appropriate use of the land and its resources. This analysis involved the evaluation of the potential manageability of wilderness, accessibility of identified mineral values for exploration and development, and the enhancement of such resource values and uses as wildlife habitat, livestock grazing, recreation, cultural resources, and others.

The DEIS describes and analyzes a Preferred Alternative, along with four additional alternatives - All Wilderness, Wilderness Accent, Resource Development and No Wilderness.

This statement was prepared in response to Section 603 of the Federal Land Policy and Management Act of 1976, which directed the Bureau of Land Management to inventory, study, and then report to Congress through the Secretary of the Interior and the President, the public lands suitable for inclusion in the National Wilderness Preservation System.

Except for mineral surveys to be conducted by the U. S. Geological Survey and the U. S. Bureau of Mines on those lands preliminarily recommended suitable for wilderness designation, this document completes the study requirements for the five WSAs in southern Lincoln and northeastern Clark Counties. The preliminary wilderness suitability recommendations will be subject to change during administrative review. The Secretary of the Interior must forward the recommendations to the President by October 21, 1991, and the President must forward them to Congress by October 21, 1993. Only Congress can designate any of the WSAs as wilderness.

Your comments on the environmental consequences of the five alternatives will be appreciated. The comment period will run through January 2, 1985. Comments should be sent to:

Kemp Conn, District Manager
Attn: Caliente Wilderness DEIS Team Leader
Bureau of Land Management
P.O. Box 26569
Las Vegas, Nevada 89126

Public hearings concerning this DEIS have been scheduled for Wednesday, November 14, 1984 at 7:00 p.m. at the second floor banquet room of the Showboat Hotel, 2800 E. Fremont, Las Vegas, Nevada and for Thursday, November 15, 1984 at 7:00 p.m. at the Caliente City Hall Council Room, Caliente, Nevada. Prior to 4:15 p.m. of the respective hearing days, requests to give oral testimony should be submitted to the Las Vegas District Office at P. O. Box 26569, Las Vegas, NV 89126 or at (702) 388-6403 prior to 4:15 p.m. on November 14, 1984 for the Las Vegas hearing and by 4:15 p.m. November 15, 1984 at (702)726-3141 for the Caliente hearing. Persons giving oral testimony will be limited to 10 minutes. Written comments may be submitted to the above address.

A Wilderness Technical Report has also been prepared, providing supplementary information to the DEIS, and is available on request to the above address.

If you have any questions concerning the DEIS, please feel free to contact either Kemp Conn, District Manager or Frank Maxwell, EIS Team Leader, at (702) 388-6403, or in our offices at 4765 W. Vegas Drive in Las Vegas.

Sincerely yours,

for Edward F. Spang
State Director, Nevada

1 Enclosure

Encl. 1 - DEIS (1)

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DRAFT ENVIRONMENTAL IMPACT STATEMENT

PRELIMINARY WILDERNESS RECOMMENDATIONS

for

CALIENTE RESOURCE AREA,

NEVADA

Prepared by

DEPARTMENT OF THE INTERIOR

BUREAU OF LAND MANAGEMENT

LAS VEGAS DISTRICT

Kemp Conn

Kemp Conn
Las Vegas District Manager

E F Spang

Edward F. Spang
State Director, Nevada

The proposed land use plan contains preliminary wilderness recommendations, subject to change during administrative review, on 588,423 acres of public land in Lincoln County, Nevada. The action responds to the mandate of Section 603 of the Federal Land Policy and Management Act of 1976 to review all public land roadless areas of 5,000 acres or more; determine their suitability or nonsuitability for wilderness designation; and report these suitability recommendations to the President no later than October 21, 1991.

For further information contact: Mr. Frank Maxwell, EIS Team Leader, at 4765 W. Vegas Dr. or P.O. Box 26569, Las Vegas, Nevada 89126, or call (702) 388-6463 or FTS 598-6463.

Please submit comments to Mr. Kemp Conn, District Manager, at the above address.

Date the final environmental impact statement with the preliminary wilderness recommendations was made available to the public:

INT DES 84-52

Comments Due January 2, 1985

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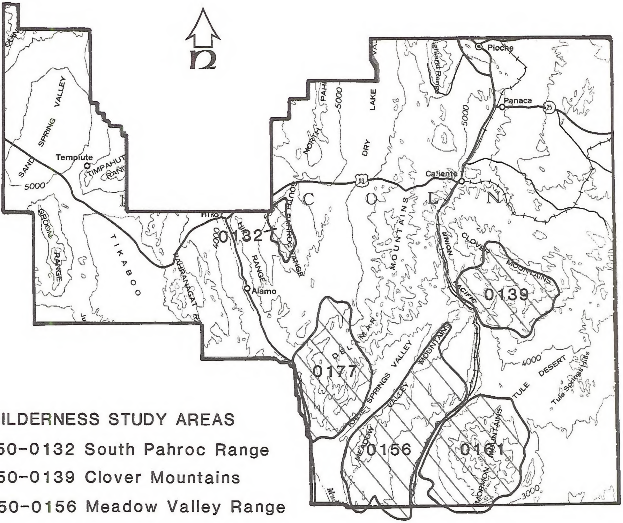

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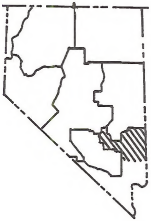
050-0139 Clover Mountains
050-0156 Meadow Valley Range
050-0161 Mormon Mountains
050-0177 Delamar Mountains



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SUMMARY

SUMMARY

PURPOSE

Federal law requires the Bureau of Land Management (BLM) to study all areas of public land with wilderness characteristics to determine the suitability of each for designation as wilderness. This study process, of which this Impact Statement is a part, is intended to identify areas which will "secure for the American people of present and future generations the benefits of an enduring resource of wilderness." This EIS analyzes the affects of designating or not designating as wilderness five Wilderness Study Areas (WSAs), totalling 588,423 acres, in Lincoln County and a small portion of Clark County, Nevada. This study will be used by various decisionmakers in making wilderness recommendations and decisions.

ISSUE IDENTIFICATION AND SCOPING

During the inventory stage, several formal public comment periods were held. Periodically, additional public input has arrived and been considered. As the study process progressed into the EIS stage, an issue identification period was held from February 25, 1983 to April 4, 1983. A large mailing and news releases announced this stage. An open house was held in Caliente the week of March 7, 1983.

Scoping was opened to the public between June 15, 1983 and August 1, 1983. It too, was announced through a large mailing and news releases. Open houses were held in Caliente, June 29, 1983 and June 30, 1983 in Las Vegas. A briefing and discussion of issues and alternatives was held July 29, 1983, for State agencies through the auspices of the Nevada State Clearinghouse.

Issues identified covered a considerable range of concerns. Rights-of-way for utility lines west of the Delamar Mountains, communications sites for the Air Force, use of air space above WSAs by military aircraft and maintenance of access to existing improvements such as developed water sources were some of the lands related issues. Others raised concerns that mineral potential be thoroughly evaluated and this resource be favored in conflict situations. Several respondents asked that minerals be considered but that alternative sources of supply and marketability be analyzed to determine whether a particular mineral resource in conflict with wilderness values was actually needed or might be readily available elsewhere. Private respondents and the Nevada Division of State Parks noted that growing population in Clark County and dwindling wilderness argued for preservation of wilderness now, and that these demands should be analyzed. The State Division of Forestry and the Nevada Cattlemen's Association felt, respectively, that pinyon-juniper areas should be in sustained yield multiple use management, or considered for vegetation conversion to produce more livestock forage and wildlife edge effects. Existing air and water quality and effects of wilderness designation or non-designation on these resources was a concern.

BLM specialists were concerned about issues involving effects on grazing, wildlife and habitat expansion projects, socio-economic effects, shared a concern with citizens about the effect of non-designation on wilderness values, utility and communication facility rights-of-way needs and an evaluation of mineral potential considering the economic aspects.

Numerous other types of issues were received but can generally be reduced to those discussed above. The EIS team felt that the issues could be reduced to the main issue of: "Which WSAs or portions thereof are more suitable for recommendation for designation as wilderness, and which areas are more suitable for other multiple use emphases based upon an analysis of the conflict between certain other resources uses and the wilderness resource."

During scoping various commenters asked that utility rights-of-way be considered, that areas of mineral potential be excluded, and that thoughtful boundary configurations be used to exclude areas of conflict without creating manageability problems. The Division of State Parks suggested alternatives be used that provide a valid range of options for wilderness, that emphasize recreational variety and use, and one that emphasizes the enhancement of manageability as wilderness over the long term. The last would consist of combining adjacent WSAs, adjusting boundaries to form more logical management configurations and closing and rehabilitating cherrystem roads, etc.

Numerous alternatives, including those suggested by the Division of State Parks, were considered by the EIS Team. The resulting alternatives present a reasonable range of options ranging from 0% suitable through 29%, 40%, 86%, and 100% suitable recommendations and incorporating all the potentially significant discriminators such as manageability, mineral values, utility corridors and high wilderness values. Of the three alternatives suggested by the Division of State Parks, all or portions are encompassed within the current alternatives with some exceptions. The range of options suggested is accommodated within the five alternatives. A recreational variety emphasis alternative was not specifically constructed because the suitability process is by policy primarily conflict driven. Any significant conflict with non-wilderness compatible recreation would be identified in the analysis and probably result in a nonsuitable recommendation for that portion of the WSA. Less than significant conflicts probably do not warrant specific analysis. Closing roads was not considered because no roads that were susceptible to closure (suitable terrain) were pivotal in developing suitable/nonsuitable recommendations.

Combining adjacent WSAs was considered but not done. Only the Mormon Mountains and Meadow Valley Range WSAs are separated by narrow linear features and thus amenable to combination. In their case, the separation is due to the Union Pacific railroad, access road, railroad utility lines, and some small areas of private property. Virtually contiguous in the Wilderness and Wilderness Accent Alternatives, it would be impractical to impossible to combine the two because of the existing rights-of-way. The other actions requested for consideration by the Division are: Manageability over the long term, and adjusting boundaries to form more logical management configurations. Manageability was a key factor in developing all alternatives but the All and No Wilderness Alternatives. Boundary adjustments were a major emphasis in formulation of the Wilderness Accent Alternative. The Wilderness Accent Alternative also effectively creates a recreational variety emphasis alternative in that it favors primitive recreation values except where manageability over the long term is a concern. Manageability in most cases is a problem with ORV accessibility which means that this recreational pursuit can occur on the nonsuitable portions of the WSAs.

In general, various segments of the public and public agencies supported the array of alternatives or specific alternatives which met their concerns. Therefore, the alternatives as originally proposed have, with minor alterations due to new information, been carried into the EIS analysis.

ALTERNATIVES

Five alternatives were analyzed in this EIS and range from a No Wilderness Alternative to an All Wilderness Alternative (see Table S-1. The No Wilderness Alternative recommends that all five WSAs are nonsuitable for wilderness designation. The All Wilderness Alternative recommends all five WSAs as suitable for wilderness designation. The Resource Development Alternative strives to eliminate potential and actual resource conflicts and only recommends those areas with the highest wilderness values. The Wilderness Accent Alternative recommends designation of all areas with wilderness characteristics, excluding only those areas with the greatest manageability problems and/or the highest conflicts with other resources.

Following impact analysis for the first four alternatives, the Proposed Action (Preferred Alternative)* was developed and its impacts analyzed. It strives to eliminate most conflicts while recommending for designation manageable areas with moderate to outstanding wilderness values. It recommends as suitable, all or portions of four WSAs. One WSA is recommended as unsuitable in its entirety.

MAJOR CONCLUSIONS

The study concludes that there will be no significant impacts to air, water, soil resources, livestock grazing, lands, forestry, cultural resources, wild horses, wildlife, and social and economic structures in any of the alternatives. Significant impacts will occur to wilderness values and recreation in some alternatives (see Table S-2). In the Wilderness Accent Alternative, an extension of the alternative boundary beyond the boundary of the WSA, creates a significant impact with potential mineral discovery. In this instance, moving the boundary to attain better physical definition, caused a conflict with an area of higher mineral potential in the Clover Mountains WSA.

* The terms "Proposed Action" and "Preferred Alternative" are used interchangeably throughout this document.

TABLE S-1

ACREAGES FOR CALIENTE WILDERNESS EIS ALTERNATIVES

Recommended Suitable by Alternative

Wilderness Study Areas	Total Acreage	Preferred		All Wilderness		No Wilderness		Resource Development		Wilderness Accent	
		AC	%	AC	%	AC	%	AC	%	AC	%
0139 Clover Mountains	84,935	84,165	99	84,935	100	0	0	53,090	63	86,020	101*
0177-Delamar Mountains	126,257	0	0	126,257	0	0	0	48,164	38	102,490	81
0156-Meadow Valley Range	185,744	97,180	52	185,744	100	0	0	17,165	9	166,500	90
0161-Mormon Mountains	162,887	23,690	15	162,887	100	0	0	23,960	15	123,130	76
0132-South Pahroc Range	28,600	28,395	99	28,600	100	0	0	25,775	86	28,600	100
Grand Totals	588,423	233,700	40	588,423	100	0	0	168,154	29	506,740	86
Percent of Resource area			7		17		0		5		15

* Additional acres resulted from boundary adjustment to enhance management.

Source: U.S. Department of Interior, Bureau of Land Management, Caliente Wilderness EIS Team, 1983.

TABLE S-2

IMPACT SUMMARY

Cultural Resources	Energy/Minerals	Lands	Livestock Grazing	Recreation	Wilderness	Wildlife	Economic	Social
ALL WILDERNESS ALTERNATIVE								
Beneficial and adverse general impacts. NSI	Mineral production potential removed in 5 WSAs SAI*	Communication sites may be disallowed Conflicts with future utility or rail corridor actions SAI	Some projects may be disallowed Additional cost associated with management and projects NSI	Protection of primitive recreation value SBI	5 WSAs protected SBI	Habitat preserved including sensitive species. Additional costs for projects and maintenance Projects possibly more difficult to accomplish. BI	Minor beneficial impacts to trades and services Minor adverse impacts to livestock, mining and state revenues NSI	Strong local opposition Strong conservationist support No change to social structure NSI.
NO WILDERNESS ALTERNATIVE								
No Impacts	No Impacts	No Impacts	No Impacts	Possible loss of primitive recreational activities SAI	Loss of Wilderness values in 5 WSAs SAI	Potential loss of habitat for human sensitive species over long term AI Planning objectives can be met without additional cost and complications to project	No Impact	Strong conservationist opposition No change to social structures NSI

TABLE S-2 (cont'd)

IMPACT SUMMARY

Cultural Resources	Energy/Minerals	Lands	Livestock Grazing	Recreation	Wilderness	Wildlife	Economic	Social
RESOURCE DEVELOPMENT ALTERNATIVE								
Same as All Wilderness NSI	Mineral production potential removed in portion 5 WSAs NSI	Communication sites may be disallowed NSI	Same as all Wilderness NSI	Overall loss of primitive recreational opportunity SAI	Overall loss of some wilderness values in 5 WSAs SAI	Some potential loss of habitat for human sensitive species over the long term. AI	Very minor beneficial impacts to trades and services Very minor adverse impacts to livestock, mining and state revenues NSI	Conservationist opposition. Some local support No change to social structures NSI
WILDERNESS ACCENT ALTERNATIVE								
Same as All Wilderness NSI	Same as all Wilderness	Conflict with railroad reallignment and some communication sites may be allowed NSI	Same as All Wilderness NSI	Overall protection of primitive recreational values SB	Same as all wilderness SBI	Same as all wilderness	Same as All Wilderness NSI	Same as All Wilderness NSI

TABLE S-2 (cont'd)

IMPACT SUMMARY

Cultural Resources	Energy/Minerals	Lands	Livestock Grazing	Recreation	Wilderness	Wildlife	Economic	Social
PREFERRED ALTERNATIVE								
Same as All Wilderness NSI	Mineral production potential removed in portions of 4 WSAs NSI	Same as Resource Development NSI	Same as all wilderness NSI	Protection of primitive recreational opportunities in 2 WSAs and portions of 2 others SBI Possible loss of primitive recreational opportunities in 1 WSA and portions of 2 others. SAI	Loss of Some wilderness values in 1 WSA and portions of 2 others. Protection of wilderness values in 2 WSAs and portions of 2 others.	Habitat preserved including sensitive species in 2 WSAs Some potential loss of habitat for human sensitive species over the long term in 1 WSA and portions of 2 others SAI	Minor beneficial impacts to trade and services Very Minor adverse impacts to livestock, mining and state revenues NSI	Mixed Support

NSI = No Significant Impacts
SBI = Significant Beneficial Impacts
SAI = Significant Adverse Impacts
BI = Beneficial Impacts
AI = Adverse Impacts

Source: U.S. Department of the Interior, Bureau of Land Management, Caliente Wilderness EIS Team, 1984.

*25 acre area in the Whitmore Mine prospect, Mormon Mountains WSA

TABLE S-3
Manageability of WSAs by Alternative

Alternative	Clover Mtns	Delamar Mtns	Meadow Valley Range	Mormon Mtns.	South Pahroc Range
All Wilderness	M	U	U	U	M
No Wilderness	U	U	U	U	U
Resource Development	M	M	M	M	M
Wilderness Accent	M	M	M	M	M
Preferred	M	U	M	M	M

M= Manageable
U= Unmanageable

CHAPTER 1

INTRODUCTION

CHAPTER ONE

INTRODUCTION

PURPOSE AND NEED

The purpose of the Proposed Action or Preferred Alternative, as the Wilderness Act states "Is to secure for the American people of present and future generations the benefits of an enduring resource of wilderness." The purpose of this Environmental Impact Statement (EIS) is to analyze potential impacts of designating or not designating all or portions of five Wilderness Study Areas (WSAs) as wilderness. In compliance with the National Environmental Policy Act, the EIS allows fully informed decisions as to the environmental effects of various decision options to be made among competing resource values. The Preferred Alternative represents the BLM's preliminary wilderness recommendations for these five Wilderness Study Areas. These recommendations are subject to change during administrative review.

The Caliente Wilderness EIS is being prepared in response to Section 603 of the Federal Land Policy and Management Act (FLPMA) of October 21, 1976. FLPMA directs the Bureau of Land Management (BLM) to inventory, study, and then report to Congress through the Secretary of the Interior and the President, the public lands suitable for inclusion in the National Wilderness Preservation System (NWPS). Suitability recommendations are to be reported to the President by October 21, 1991 and to Congress by October 21, 1993.

LOCATION

All five WSAs are located within the Caliente Resource Area in Lincoln County, Nevada (See Location map). The southernmost tip of two of the WSAs (Mormon Mountains and Meadow Valley Range) lie within Clark County, Nevada. Lincoln County is located in southeastern Nevada and encompasses 6,816,000 acres, of which 5,749,866 are administered by BLM. The five WSAs analyzed in this document are within three hours driving time of Las Vegas, Nevada.

THE PLANNING PROCESS

Amendment of the Caliente Management Framework Plan

The Caliente Management Framework Plan (MFP), the current land use plan for the Resource Area, does not consider management of the five WSAs as wilderness. Therefore, designation of any of the WSAs as wilderness would not be in conformance with the land use plan as it is currently written.

To incorporate designation of any of the WSAs into the present land use plan it is necessary to amend the MFP. This amendment process utilizes the steps outlined in the resource management planning process described in the BLM Planning Regulations (43 CFR 1601). This EIS analyzes the impacts on affected resource values of implementing such a plan amendment and satisfies Steps 6 and 7 listed below. The Resource Management Planning Steps are:

Step 1: Identification of Issues

Step 2: Development of Planning Criteria

Step 3: Inventory Data and Information Collection

Step 4: Management Situation Analysis

Step 5: Formulation of Alternatives

Step 6: Estimation of Effects of Alternatives

Step 7: Selection of the Preferred Alternative (Draft Plan/EIS)

Step 8: Selection of Resource Management Plan (Final Plan/EIS)

Step 9: Monitoring and Evaluation

Public participation was or will be provided for at steps 1, 2, 3, 5, 7, and 8.

Planning Issue

The Planning Issue, developed during the scoping process for the Caliente MFP Amendment is, "Which wilderness study areas or portions of wilderness study areas, if any, within the Caliente Resource Area, are suitable for recommendation to Congress for wilderness designation?".

Planning Criteria

The Preferred Alternative will only recommend areas as suitable for wilderness designation where the wilderness values and the multiple resource benefits that wilderness designation would provide are sufficient to balance the benefits of the other resource values and uses which would be foregone due to wilderness designation. The Preferred Alternative will also only recommend areas as suitable if they can be managed as wilderness over the long term.

WILDERNESS STUDY

The Wilderness Study Policy, a national policy that guides the wilderness study process, was issued by the BLM in February, 1982. This study policy sets forth the requirements that must be followed to determine an area's suitability or nonsuitability for preservation as wilderness. It mandates two criteria and six quality standards that must be addressed during the wilderness studies of which the EIS is part of. A summary of these criteria and quality standards follows. For more detailed information refer to the actual Wilderness Study Policy, available at any BLM Office.

Criterion 1: Evaluation of Wilderness Values

a) Mandatory wilderness characteristics

b) Special features

c) Multiple resource benefits

d) Diversity in the National Wilderness Preservation System

Criterion 2: Manageability

Quality Standards

1) Energy and mineral resource values

2) Impact on other resources

3) Impact of nondesignation on wilderness values

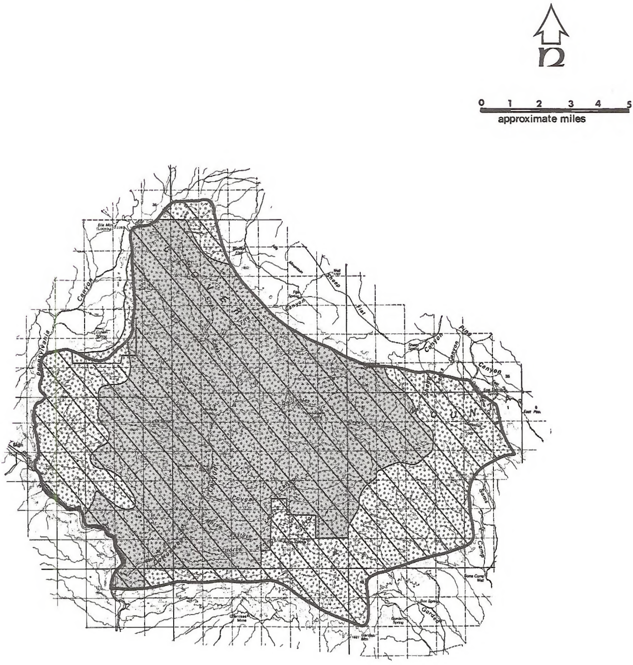
4) Public comment

5) Local social and economic effects

6) Consistency with other plans

CHAPTER 2

ALTERNATIVES



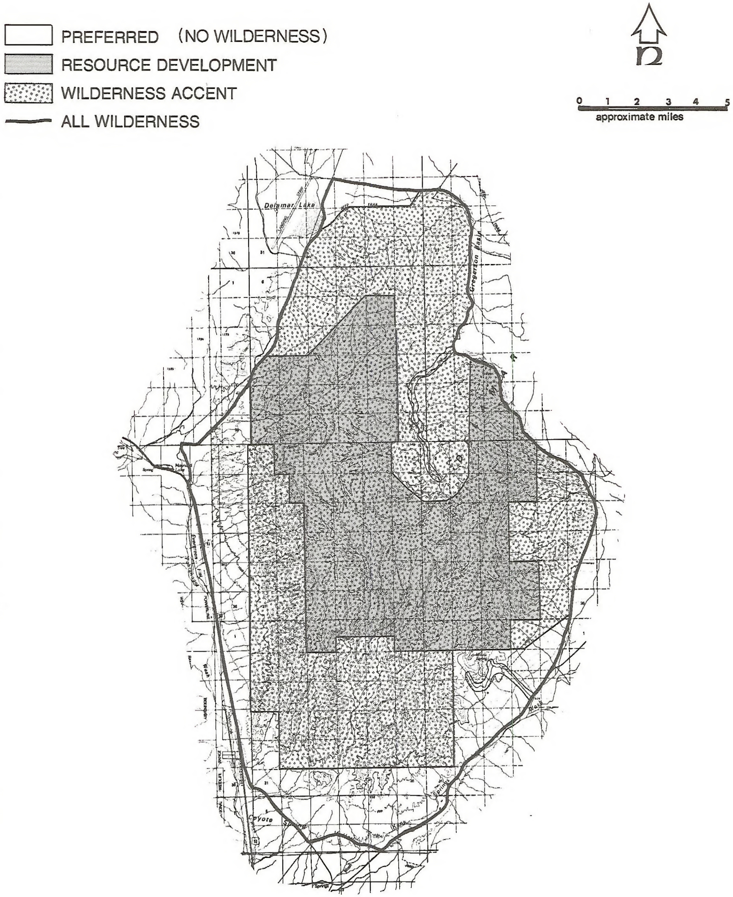
▧ PREFERRED

▒ RESOURCE DEVELOPMENT

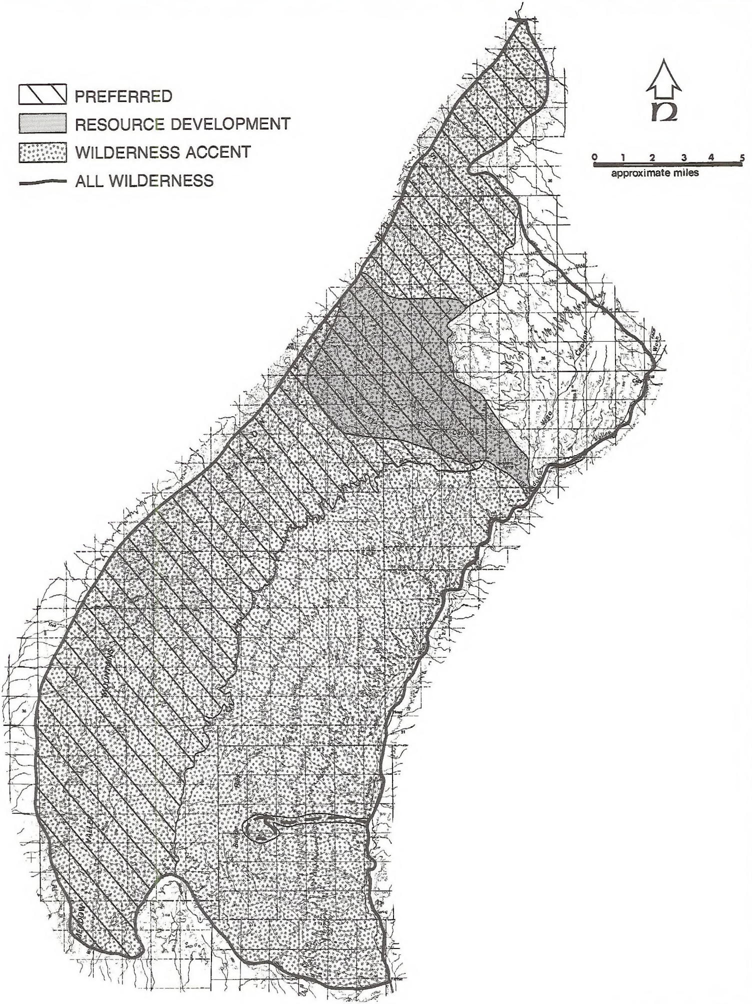
░ WILDERNESS ACCENT

— ALL WILDERNESS

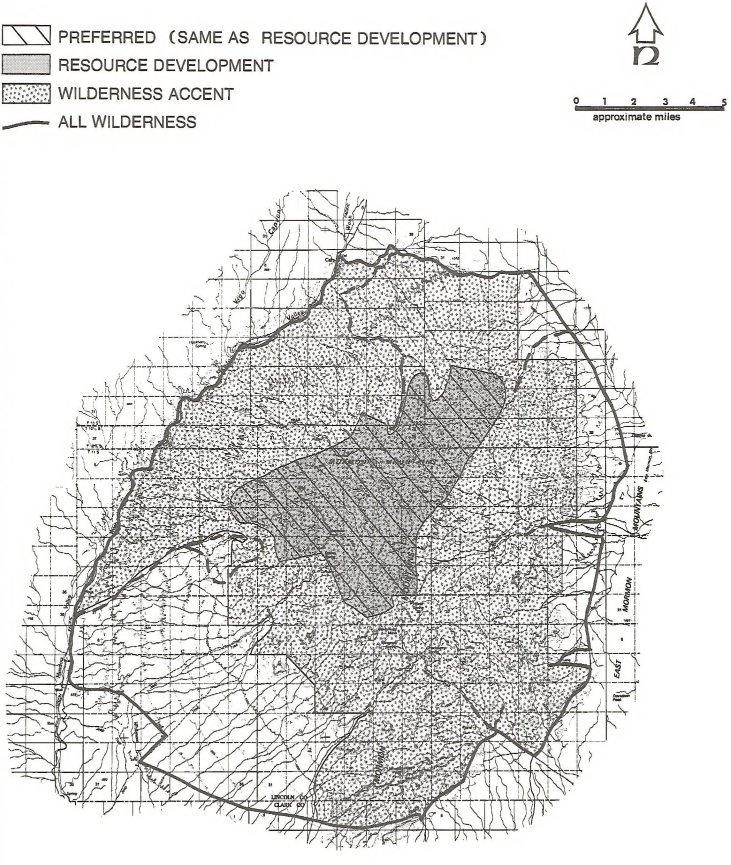
ALTERNATIVES
CLOVER MTNS. NV-050-0139



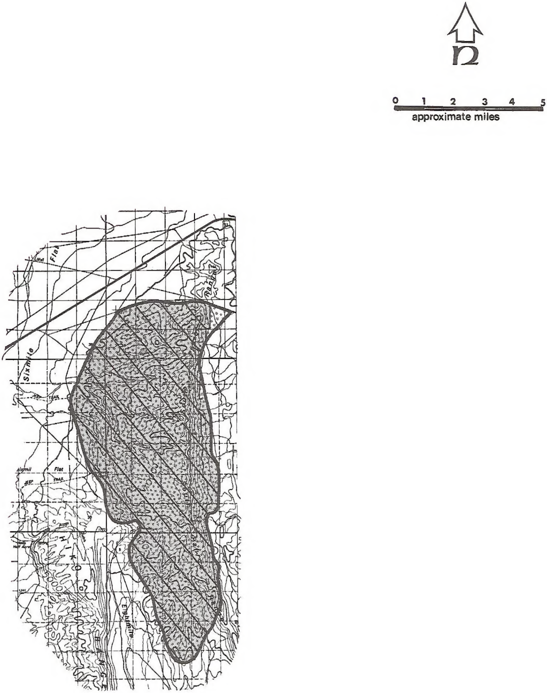
ALTERNATIVES
DELAMAR MTNS. NV-050-0177



ALTERNATIVES
MEADOW VALLEY RANGE NV-050-0156



ALTERNATIVES
MORMON MTNS. NV-050-0161



▨ PREFERRED

▒ RESOURCE DEVELOPMENT

░ WILDERNESS ACCENT (SAME AS ALL WILDERNESS)

— ALL WILDERNESS

ALTERNATIVES

SOUTH PAHROC RANGE NV-050-0132

CHAPTER TWO

ALTERNATIVES

INTRODUCTION

The make-up of each of the alternatives analyzed in this document are discussed along with how each WSA relates to the particular alternative. Of the five alternatives, three are required by policy or regulation. These are All Wilderness, No Wilderness, and Partial Wilderness. A fourth alternative, No Action, is required but in this case is the same as the No Wilderness Alternative. Partial Wilderness is covered using two alternatives which emphasize preservation and development, respectively

Alternatives were developed utilizing the Caliente Resource Area's MFP, resource specialists' input, technical studies such as the Geology-Energy-Minerals (GEM) Reports and public needs, opinions, and concerns. The objective was to develop viable alternatives with good management potential which enabled analysis of the effects of various levels of suitability/nonsuitability ranging from All to No Wilderness. A comparative table showing the acreages and percentage suitable by WSA by alternative appears in Table S-1 of the Summary.

MANAGEABILITY

Based on the wilderness values of each WSA described in Chapter 3, and the impacts on these wilderness values analyzed in Chapter 4, the manageability of each WSA has been determined as follows.

The Clover Mountains and South Pahroc Range WSAs are considered manageable as wilderness under all the alternatives except for the No Wilderness Alternatives.

The Delamar Mountains, Meadow Valley Range and Mormon Mountain WSAs are considered manageable as wilderness under all the alternatives except for the All and No Wilderness Alternatives.

The Delamar Mountains WSA is not considered manageable as wilderness under the All Wilderness Alternative because the west side is subject to the influences of outside sights and sounds emanating from the highway which forms its boundary, from power lines which are expected to be constructed there in addition to the existing line, from the development of material sites along the highway and because some of the area is accessible to ORVs. On the south and east portions, accessible terrain and washes permit ORV use. On the east and north sides, existing ways are used as short cuts by local people and these would be difficult to close due to a lack of topographic barriers.

The Meadow Valley Range is not considered manageable as wilderness under the All Wilderness Alternative because terrain on the extreme southeastern end and on the northeastern end in the Vigo Wash drainage is accessible to ORVs and in the case of the Vigo Wash area is already crisscrossed by numerous ways. Lack of topographic barriers makes control of this activity very difficult. The southeastern end is also encumbered by post-FLPMA mining claims.

The Mormon Mountains WSA is not considered manageable as wilderness under the All Wilderness Alternative because the southwestern bajada is crossed by cherrystem roads, lacks topographic barriers to preclude ORVs and is partially encumbered by post-FLPMA mining claims. Along the east side, some bajada areas are accessible to ORVs from the Carp-Elgin boundary road and lack topographic barriers sufficient to preclude such use. Manageability of WSAs by alternative appears in Table S-3.

ALTERNATIVES

Actions which forseeably may occur and upon which this analysis is mainly based are discussed in Appendix B, "Non-wilderness Development Scenarios." Activities proposed do not include the closing of any cherrystemmed roads.

Preferred Alternative

(Suitable: 233,700 acres, Nonsuitable: 354,723 acres)

The Preferred Alternative was developed using an interdisciplinary team approach and management decision. Consideration was given to the results of the impact analysis for the other alternatives and to public input during the inventory and preceding EIS stages.

Relative wilderness values and potential conflicts with other resources were weighed. Significant conflicts were resolved in favor of the resource having the greatest public value.

Manageability and resource conflict considerations lead to the exclusion of areas where closely spaced cherrystem roads would contribute to future manageability problems, where existing and proposed management plans may conflict with wilderness policy, where mining claims may be developed, where utility lines will affect nearby lands and where terrain is very likely to be used by ORVs without heavy management attention. Future needs such as power lines, facilities necessary for the management of other resources, road and railroad realignments were considered and boundary adjustments made accordingly.

Clover Mountains

New Configuration

(Suitable: 84,165 acres, Nonsuitable: 770 acres)

The entire unit is recommended as suitable except for an adjustment to exclude an area of mining claims adjacent to the Pennsylvania Mining District. This adjustment removes an area which may present a minerals conflict and manageability and intrusion problems if exploration or development proceeds on these claims. An adjustment was also made to permit future realignment of the railroad, access road and utilities adjacent to the WSA in Meadow Valley Wash. This moves the boundary back two hundred horizontal feet from the existing improvements or to the base of steepening topography whichever is greater. Outstanding wilderness values and primitive recreation opportunities are included, including a flowing stream system. Slight manageabililty concerns exist on small portions of the area. A thick section of volcanic rock strata with unknown mineralization overlies most of the unit and conceals unknown mineral potential that may be inferred.

Delamar Mountains

Same as No Wilderness Alternative

(Suitable: 0 acres, Nonsuitable: 126,257 acres)

This configuration conflicts with protection of wilderness resource values but resolves manageability concerns, land use concerns for utility corridors, and possible conflicts with a court-ordered allotment management plan implementation.

Fringe areas are recommended nonsuitable where wilderness values are low and seriously depreciating usages or external influences exist. The western bajada is very susceptible to ORV use in the future because of its terrain and proximity to highway 93. All of it is exposed to highway sights, sounds and influences. Use of the major energy corridor along the WSA's western boundary will add a large increment of external influences in addition to those emanating from the existing 69KV powerline. Corridor expansion needs also outweigh the low wilderness values extant here. The southern bajada is exposed to outside influences from boundary roads and occasional ORV use up its washes. Bajadas on the east are influenced by ORV use and range improvements. On the north adjoining Delamar Dry Lake, ORVs have been a problem and wilderness values are not outstanding. Access may be difficult to control in areas adjacent to on the Pony Well cherrystem road and some access must be available to maintain existing range improvements.

Meadow Valley Range

New Configuration

(Suitable: 97,180 acres, Nonsuitable: 88,564 acres)

This unit is partially recommended as suitable. Exclusions were made in areas of lower value wilderness for ORV manageability where numerous ways provide access on the northeastern quadrant and in the central and southeastern sections where future manageability problems may arise. The remainder of this vast area has some portions exhibiting moderate wilderness values, including some outstanding opportunities for solitude. Primitive recreation opportunities are good though not outstanding. This alternative was configured to preserve the better portions of the WSA, without including areas of low wilderness values and having or likely to have manageability problems from ORVs or mineral exploration.

Low wilderness and recreation values exist in the nonsuitable central, northeastern and southeastern areas. These values are greater in the Bunker Hills, though not outstanding. Previous energy/minerals exploration has left a cherrystem road and a disturbed area at its terminus. Several ways associated with access to this site indicate future ORV problems in the region if access is opened up from Meadow Valley Wash. Lower Hackberry Canyon was omitted because of ORV use, hunters driving to Hackberry Spring and a cattle handling facility there. Absent presently foreseeable attractions, much of the remaining nonsuitable land will likely remain mostly undeveloped for decades more. A potential conflict remains with a measured deposit of subeconomic perlite near Avertt Reservoir.

Good wilderness values exist in the remaining suitable portions of the unit. This unit, because of its size and lack of visitation, offers outstanding opportunities for solitude and truly untrammeled acreage.

Mormon Mountains

Same as Resource Development Alternative

(Suitable: 23,960 acres, Nonsuitable: 138,927 acres)

The core portion of this unit is recommended as suitable. Exclusions are made along the eastern boundary to remove closely spaced cherrystem roads and bajada areas presenting future and current ORV manageability problems.

On the southwestern bajada, large blocks of mining claims and gentle terrain create probable future manageability problems and this area was consequently excluded. An area to the north of the preceding bajada discussed, was also excluded because of ORV manageability problems in the future and because wilderness values are low there. Included are areas of outstanding wilderness values, caving and cultural resources. This alternative excludes all known mineral prospects and claims, but includes a portion of the WSA's large area of carbonate rocks which may have lime or cement source potential.

South Pahroc Range

New Configuration

(Suitable: 28,395 acres, Nonsuitable: 205 acres)

The majority of this unit is recommended as suitable. An exclusion was made for perlite claims on the extreme northeast corner, which are near an occasionally operating perlite mine. Minor areas susceptible to ORV use remain in the suitable portion but their inclusion permits more recognizable boundaries. Outstanding wilderness values and primitive recreation opportunities are included in a setting of unusual large boulders and scattered dense growths of trees which include white fir.

All Wilderness Alternative

(Suitable: 588,423 acres, Nonsuitable: 0 acres)

This alternative recommends all five WSAs as configured from the inventory process, as suitable for wilderness designation. All areas would be managed in accordance with the Wilderness Management Policy, which would result in environmental effects being limited to those caused by the forces of nature with only substantially unnoticeable human imprints being allowed. Manageability problems would be manifested in portions of some areas. Conflicts exist with some mineral potential and with utility corridor requirements.

WSA	Suitable Acreage	Nonsuitable Acreage
Clover Mountains	84,935	0
Delamar Mountains	126,257	0
Meadow Valley Range	185,744	0
Mormon Mountains	162,887	0
South Pahroc Range	28,600	0
TOTAL	588,423	0

No Wilderness Alternative

(Suitable: 0 acres, Nonsuitable: 588,423 acres)

The No Wilderness Alternative is mandated by the Council on Environmental Quality and BLM's Wilderness Management Policy.

This alternative recommends that none of the five WSAs are suitable for wilderness designation, nor any portion thereof. Under this alternative, the land and resources would be managed according to current Management Framework Plans. Conflicts exist, to varying degree, with long term preservation of primitive recreation and wilderness resources.

Resource Development Alternative

(Suitable: 168,154 acres, Nonsuitable: 420,269 acres)

This alternative was developed utilizing primarily the Geology-Energy-Mineral(GEM) Reports and keying in on the very highest wilderness values. In developing this alternative, based on mineral occurrence favorability, no consideration was given to such mineral economic factors as quality and quantity and alternative sources of supply nearer to markets. The presence of a potential mineral deposit by itself viewed in a very optimistic way is considered here as triggering a conflict. The GEM Reports identified areas of moderate to high minerals favorability with a moderate to high confidence level. In two cases where outstanding wilderness values potentially conflicted with minerals, areas recommended as suitable were configured to exclude those portions thought more likely to harbor valuable mineral discoveries.

Other criteria used for developing this alternative were conflicts with existing management plans and other factors which would create manageability problems, i.e. roads, pipelines, topographic features, etc. Any area conflicting with these criteria and not having outstanding wilderness values was recommended unsuitable.

Clover Mountains

(Suitable: 53,090 acres, Nonsuitable: 31,845 acres)

In this WSA, most of the valuable wilderness attributes are held in the Pine, Ash, and Cottonwood Creek drainages. The area recommended as suitable was configured to include this drainage but to exclude a large block of lode claims located in the south-central portion of the WSA (these have since been dropped). Also excluded, were drainages which run into the Tule Desert watershed and those which drain directly to Meadow Valley Wash rather than into the Pine-Cottonwood Creek complex.

Possible conflicts remain with mineral resource potential in the core area where unknown mineralization may occur in rocks within or beneath the volcanic cover and in a small portion of the southwestern section of the WSA where bedrock beneath the alluvium may be mineralized. Presumably, underlying bedrock formations within the WSA are similar to those exhibited in mineralized bedrock outcrops exposed in the mining districts adjacent to the WSA.

Areas recommended as nonsuitable include large portions covered by Tertiary volcanics, which may conceal mineralized areas, and a small area in the southern end rated as high potential due to the adjacent Viola Mining District.

Delamar Mountains

(Suitable: 48,164 acres, Nonsuitable: 78,093 acres)

Some wilderness values are moderate to outstanding in this unit. The area recommended as suitable preserves that portion of the unit that alleviates conflicts with mineral resources having potential for silica, lime and limestone, and sand and gravel production. This alternative also eliminates some potential conflicts to full implementation of the Delamar AMP. This concern is based upon a negotiated court settlement and dismissal of an appeal which dictated that BLM implement the existing AMP. Also eliminated are conflicts with existing and proposed powerlines adjacent to the west boundary. Unsuitable areas are of generally low wilderness value and frequently susceptible to ORV use. Several intrusions and ways are also eliminated.

Meadow Valley Range

(Suitable: 17,165 acres, Nonsuitable: 168,579 acres)

This WSA possesses low, moderate and outstanding wilderness values and is enhanced by its large size. Removing potentially conflicting non-metallic mineral resource potential, which includes perlite, gypsum and possible lime or cement sources, plus known sand and gravel and suspected gypsum, still leaves a core area possessing wilderness values. No conflict with metallic potential exists. The northeastern or Vigo Canyon portion of the area is crossed by easily accessible washes and ways and thus is excluded for manageability reasons in addition to non-metallic mineral conflicts.

Mormon Mountains

(Suitable: 23,960 acres, Nonsuitable: 138,927 acres)

Same as Resource Development Alternative

The core portion of this unit is recommended as suitable. Exclusions are made along the eastern boundary to remove closely spaced cherrystem roads and bajada areas presenting future and current ORV manageability problems. On the southwestern bajada, large blocks of mining claims and gentle terrain create probable future manageability problems and this area was consequently excluded. An area to the north of the preceding bajada discussed, was also excluded because of ORV manageability problems in the future and because wilderness values are low there. Included are areas of outstanding wilderness values, caving and cultural resources. This alternative excludes all known mineral prospects and claims, but includes a portion of the WSA's large area of carbonate rocks which may have lime or cement source potential.

South Pahroc Range

(Suitable: 25,775 acres, Nonsuitable: 3,025 acres)

This WSA is little known, remote, and has outstanding wilderness values. There is remarkably little conflict with other resources in this WSA. As configured for this alternative, areas of potential perlite resources extending north and south from an occasionally operating perlite mine, are excluded. Sand and gravel resources of questionable marketability remain in potential conflict around the fringes.

Wilderness Accent Alternative

(Suitable: 506,740 acres, Nonsuitable: 82,768 Acres)

The Wilderness Accent Alternative was developed using the least restrictive interpretation of the study criteria and quality standards of any but the All Wilderness Alternative. Nonsuitable areas were identified because of manageability concerns such as ORV access potential and important utility corridor needs, an operating mine, and better boundary recognition. Areas eliminated had low wilderness values and potentially serious conflicts for long term management as wilderness.

Clover Mountains

(Suitable: 86,020 acres, Nonsuitable: 0 acres)

The entire area of this WSA plus an additional area exterior to the northwest boundary of the WSA, sufficient to bring the boundary to the ridgeline to permit better boundary definition, is recommended as suitable. The added area appears to be natural and contains no roads or ways. Wilderness values are high and the area encompasses the entire watershed of a flowing stream system which is a rare situation in this district. Vegetation is heavy in most of the WSA and includes ponderosa pine stands.

Delamar Mountains

(Suitable: 102,490 acres, Nonsuitable: 23,767 acres)

Portions of this unit were deleted for a combination of manageability conflicts conjoined with a lack of significant wilderness values. ORV accessibility was a consideration in moving the boundary inward in all instances. Along the west side, the need for a utility corridor and reducing the visual effects of the corridor on both the highway and potential wilderness area were considered. ORV use currently exists along the jeep road crossing the north edge of the WSA, along the old county road on the southeast (Willow Spring) side, and up Bomber Wash from the south. The western portion of the WSA consists of a large bajada extending from highway 93 eastward, for several miles to the more rugged terrain of the Delamar Mountains themselves. While not currently being subjected to significant ORV use, the terrain in the washes is susceptible to such use. Additionally, there are some permitted and some operating material sites located near the highway which predate the wilderness inventory. These were apparently erroneously included within the WSA boundary. Wilderness values are low within the deleted areas. Portions of the remaining area have some outstanding wilderness values.

Potential conflicts with minerals consist of material sources, limestone and silica sand sources.

Meadow Valley Range

(Suitable: 166,500 acres, Nonsuitable: 19,244)

The majority of this unit is recommended as suitable. Due to its large size, and in portions, its topographic configuration, opportunities for solitude are outstanding. Other wilderness values are moderate. Manageability seems to be an immediate problem only where two large washes at Hackberry Canyon and Vigo Wash permit access up the washes themselves but not out of the wash. The area north of Vigo Wash is susceptible to ORV access and is crossed with numerous ways, so was recommended nonsuitable. ORV manageability may be a problem on the central bajada in the future if access is developed. ORVs and past mineral exploration have created potential manageability problems in sections of the Bunker Hills.

Potential conflicts exist with sand and gravel resources, with currently unutilized gypsum and perlite deposits and with potential lime, cement, and silica sources.

Mormon Mountains

(Suitable: 123,130 acres, Nonsuitable 39,757 acres)

The core of this area possesses outstanding wilderness values. Peripheral areas are penetrated by cherrystem roads, but large areas, inaccessible to vehicles, lie between these. Lesser wilderness values occur on large bajadas flanking the mountains, for example, on the southwestern flank. Because of limited wilderness values, extensive placer mining claims, ORV management problems, and several cherrystem roads, this bajada and smaller portions along the WSA's eastern flank, were considered as nonsuitable.

Potential conflicts remain with two localized areas of known or suspected mineralization. Nonmetallic conflicts exist with lime, sand and gravel, and silica sand prospects.

South Pahroc Range

(Suitable: 28,600 acres, Nonsuitable: 0 acres)

This entire unit is recommended as suitable. Its wilderness values are outstanding throughout most of the unit. ORV access is possible only on small fan areas which were left in for better boundary definition. The only conflict is with potential perlite resources which have been claimed on the extreme northeast part of the unit, north of an occasionally operating perlite mine.

CHAPTER 3

AFFECTED ENVIRONMENT

CHAPTER THREE

AFFECTED ENVIRONMENT

INTRODUCTION

This Chapter describes the natural and socioeconomic environment of the Caliente Resource Area and specific resources and uses found within the five WSAs and serves as a basis on which impacts of each alternatives are assessed. Emphasis has been placed on those resource components more likely to be impacted.

The primary data sources for preparing this EIS are documents of the Bureau Planning System, Wilderness Technical Reports (1984), Wilderness Inventory data and GEM Reports. When supplementary references were consulted, they are cited within the body of the text by author and date of publication and also listed in the References.

GENERAL REGIONAL OVERVIEW

The Caliente Resource Area includes approximately 3.4 million acres of public land within the Basin and Range Physiographic Province. The topography is characterized by isolated, steep, north-south trending, somewhat parallel mountain ranges separated by desert basins. Most basins are filled with alluvial debris derived from the surrounding highlands. The structure is complex, with many older major (Paleozoic and later) structures obscured by younger Cenozoic volcanics and sediments and by basin and range block faulting. Elevations range from about 2,000 feet at the south edge of the Tule Desert to 9,395 feet at Highland Peak.

Vegetation in the region is grouped into seven major vegetative communities. These vegetation types include the following, listed in order of descending acres; southern desert shrub, pinyon-juniper, northern desert shrub, salt desert shrub, other types (includes annual types and unclassified or barren); chaparral, conifer forest.

In general, the region has a semiarid continental climate. The average annual precipitation on valley floors is usually less than eight inches and generally increases with elevation to 16 inches or more in the mountains. Temperatures vary greatly within the Resource Area but may range from $-14^{o}F$ to $109^{F}$with an average of 100 or more frost-free days a year. Prevailing winds are from the south and southwest in the spring, summer, and fall and from the north in the winter. Hot summer winds in conjunction with warm temperatures produce a free water evaporation rate of about 95 inches a year.

Due to the lack of precipitation, warm temperatures, and high evaporation rates water is sparse or nonexistent in most of the WSAs. The only WSA with a perennial stream system (Cottonwood Creek) and its tributaries is the Clover Mountains. It is important to remember that lack of water does not preclude wilderness qualities, but its presence may enhance wilderness values. The Wilderness Act of September 3, 1964, did not specify that all wilderness areas had to be spectacular forested mountains with beautiful alpine meadows and cascading streams, but that a wilderness would be "recognized as an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain".

UNAFFECTED RESOURCES

Air Quality - All WSAs within the Caliente Resource Area have a Class II rating as defined by the Clean Air Act of 1977. This classification would not change due to designation of an area as wilderness. Any changes in air quality classification would proceed from the State's volition. All Bureau and Bureau authorized activities must be designed to prevent air quality deterioration beyond the established standards specified in the Nevada Ambient Air Quality Standards.

Climate - Recommending an area as either suitable or nonsuitable for wilderness designation would not affect the climate of the region.

Fire Management - Designation or nondesignation of an area as wilderness will not have a significant effect on the fire management program. In some cases wilderness designation may add to fire suppression and/or management cost but never significantly. Fire suppression techniques are currently designed to maintain wilderness values in the WSAs. Fire management plans will be developed for any area designated as wilderness.

Forestry - Even though marketable wood products do exist within the WSAs, there are sufficient quantities of woodland products (cordwood, fence posts, Christmas trees, etc.) outside the boundaries of the WSAs to meet foreseeable demands.

Soils - Environmental analysis is a prerequisite to any surface disturbing activities. In the course of this analysis specific stipulations or design criteria may be developed to mitigate any adverse affects to soil resources.

Threatened or Endangered Species/and State Sensitive Species - There are no known or suspected Federally listed or proposed listings of threatened or endangered species within the WSAs with the exception of the peregrine falcon which has been occasionally sighted in the Clover Mountains. The northern Spotted bat which is state listed as rare, has been known to occur in the Mormon Mountains. No threatened or endangered plants are known in or near any of the WSAs. Two state listed plant species are known to occur in the Meadow Valley Range, Mormon mountains and Delamar Mountains WSAs. This may be due to an intrinsic lack of such species or may be attributable to a lack of surveys due to the rugged and inaccessible terrain in several of the areas.

Wild Horses and Burros - Less than three percent of the total wild horse and burro populations in the Caliente Resource Area occur within the Meadow Valley range, Mormon Mountains and Clover Mountains WSAs. The other WSAs have none. Designation of these WSAs would not be a significant impact to the animals, but it could restrict management alternatives and techniques somewhat. Management actions needed to implement wild horse and burro herd management area plans would be allowed subject to the limitations described in the BLM Wilderness Management Policy. Access to these three WSAs for monitoring, population control, and improvement projects would be restricted to non-impairing means.

AFFECTED RESOURCES

Cultural Resources

Archaeological surveys within the majority of the WSAs are confined to a few project-specific intensive and/or extensive inventories. Thus little information is currently available relative to cultural resources in most of the study areas. However, in the Mormon Mountains WSA, a recently completed sample-oriented cultural resources survey has yielded a wide range of statistical data. In addition, the WSA contains several spectacular limestone caves which contain many examples of stalactites, stalagmites, and unusual columnar structures. This WSA is considered as being within a high sensitivity zone for cultural site occurrences. A Class I Cultural Resources Inventory (literature review) (1978) provides a general overview of the prehistory and history of Lincoln County. Approximately 300 prehistoric sites have been recorded in these WSAs.

Approximately two-thirds of these sites are located in the Mormon Mountains WSA. Although this is a highly sensitive area, the high proportion of recorded sites is partially due to the large systematic inventory which was recently completed for the Mormon Mountains. Other sensitive WSAs with numerous known sites are the Clover Mountains and the Delamar Mountains. It is also possible to delineate sensitive areas based on the presence or absence of key environmental variables; for example, pinyon-juniper, agave, springs, extinct lake shores, terraces, and mesquite dune hummocks are more likely to exhibit associated cultural resource values.

Energy and Mineral Resources

The only mineral of proven quality and marketability present in any of the WSAs is sand and gravel near authorized material sites at the boundaries of some WSAs. All of the WSAs contain sand and gravel. One WSA is near an area containing minable perlite. This mineral resource may extend into the WSA. Perlite also occurs in another WSA.

Mining claims are absent from the Delamar Mountains WSA, but occur in all the others. Most claims are inactive, although some minor exploration activity is occurring on claims in the Mormon Mountains WSA.

Past mineral production from the WSAs has been minor. None has occurred from the Clover Mountains, Delamar Mountains and South Pahroc Range WSAs. Some minor production apparently may have occurred at the Whitmore Mine Prospect in the Mormon Mountains WSA. A few tons of gypsum reportedly were shipped from the Robb deposit in the Meadow Valley Range WSA.

There has been no hydrocarbon production from any of the WSAs. All are leased post FLPMA and one exploratory well was drilled in the Meadow Valley Range WSA in the 1970's with no known results.

Minerals and energy resources have been grouped by potential and significance. These are shown in Tables 3-1 and 3-2. An explanation of this classification system appears in Appendix A.

Lands

There are no private lands in any of the five WSAs. A planning utility corridor borders the west side of the Delamar Mountains WSA. At present there is one existing 69KV utility line (Lincoln County Electric, 100 feet wide) within the corridor. The construction of an additional 500KV powerline has been approved for the Intermountain Power Project (IPP) and will run parallel to the existing powerline. In addition the White Pine Power Project is planning one or two other 500KV powerlines which would run adjacent to IPP and the 69KV in one alternative for that project. No other utility corridors affecting these WSAs have been identified by the Western Regional Corridor Study. One transportation corridor (Union Pacific Railroad, 200' wide) borders the southwest side of the Clover Mountains, the east side of the Meadow Valley Range WSA and the west side of the Mormon Mountains WSA. There are some material site rights-of-way along the west side of the Delamar Mountains WSA. Post FLPMA oil and gas leases cover all WSAs except for the South Pahroc Range WSA, which is largely unleased.

TABLE 3-1

EXPLANATION OF MINERAL GROUPS
LISTED IN DESCENDING ORDER OF SIGNIFICANCE

Mineral Group Number	Explanation
1. Strategic or Energy-Related -	Those minerals that are stockpiled and listed with strategic and /or critical materials or those minerals if not strategic are energy-related.
2. Import Reliance -	Those minerals produced domestically that are supported with a 50 percent or more import reliance.
3. Major Export -	Those minerals that are Nationally important of which the U.S. is a net exporter.
4. Regional/Local Importance -	Those minerals that are only of regional or local domestic importance.

Source: Bureau of Land Management, Las Vegas District, Caliente Wilderness Team, 1983.

TABLE 3-2

CLASSIFICATION OF MINERAL POTENTIAL*

Relative Potential	Explanation
1.	This class includes areas interpreted on the basis of known mineral deposits of A) Group 1,2, & 3 commodities existing in significant quantities and B) Group 1-4 commodities mined in the Planning Unit (includes presently producing areas).
2.	This class includes areas containing known mineral deposits with reserves and/or resources of A) Group 1,2, & 3 commodities not known in significant quantities, B) Group 1-4 commodities known in significant quantities but without significant demand and C) Inferred occurrences of significant amounts of Group 1,2, & 3 Class 1 commodities.
3.	This class includes areas interpreted to be favorable for future discovery of mineral deposits based on evaluation of geologic, geophysical and/or geochemical data (higher confidence than 4).
4.	This class includes areas for which the potential for mineral resources is interpreted on the basis of preliminary evaluation of geologic, mineral occurrence and limited field verification data only. No further analysis has been done.
5.	This class includes areas that could not be classified due to insufficient data and areas where known geology is considered unfavorable for the type of mineral deposit.

* Based on Commodity Significance (Table 3-1) and Occurrence Potential.
Source: Bureau of Land Management, Las Vegas District, Caliente Wilderness EIS Team, 1983

Livestock Grazing

The entire Caliente Resource Area is classified as perennial range with some ephemeral use being permitted. Within the Resource Area are 84 allotments used by 67 permittees. There are two additional allotments which are ungrazed and unallotted. They are the Naquinta Spring and the Panaca SCS allotments. Of this total, 27 allotments and 37 permittees or 32 percent and 55 percent, respectively, are affected by the five WSAs (see Table 3-3). Livestock licensed use consists of cattle and sheep.

The grazing users of the Caliente Resource Area are highly dependent on the public lands for their year-round grazing operations. Few have private lands large enough to accomodate their range herds. Even fewer have access to grazing on National Forest lands.

Most of the operators run a cow/calf or ewe/lamb operation, with the net saleable product being weaners, stockers, feeders, or lambs. The cycle from the grazing of the public lands to the final product is short term, one year or less. The creation of a new animal on the range is a new source of wealth, and upon sale, a new dollar value accrues to the economy.

Through land-use plans the Bureau has categorized all allotments for the purpose of implementing the selective management policy. This policy is based on the grouping of allotments into three selective management categories according to specific local management criteria. Allotments sharing similar characteristics would be grouped through allotment analysis into the M, I, or C categories (i.e., M = maintain or improve the existing situation; I = improve the existing situation; or C = manage the lands in a custodial manner). See Table 3-3 for selective management classification by allotment.

Those allotments in the I category will receive the highest priority for range project funding because they have a higher potential for resource improvement and have the most potential from a cost-benefit standpoint. A limited number of improvements are planned for the M or C allotments, however, more could be proposed at a later date.

Nearly all livestock users employ motorized vehicles on public land in the day-to-day conduct of their operations. These operations involve surveillance, salting, project maintenance, etc.

Most of the WSAs have some type of range project either built by the BLM or the permittee. At present, construction of several wells, reservoirs, spring developments and fences are proposed within the WSAs.

Recreation

Recreation usage on public land within the Caliente Resource Area is dispersed and varied. Activities include hunting, fishing, frog gigging, sightseeing,photography, trapping, hiking, nature study, bird watching, backpacking, horseback riding, rockhounding, camping, picnicking, and off-road vehicle (ORV) use. The Caliente Resource Area must be classified as having outstanding opportunities for recreational pursuits with only limited demand. The only liabilities to these recreational activities are a lack of availability of surface waters and climatic extremes. The BLM provides no developed recreation sites within the Resource Area but the Nevada State Park system has several parks and camping facilities within the region.

ORV use occurs throughout the Resource Area with the majority (90-95 percent) being confined to existing roads and trails. No significant resource damage is known to be occurring from ORV use. Competitive ORV events do

TABLE 3-3

LIVESTOCK GRAZING IN WSAs

WSA	Allotment(s)	Acreage in WSA	Number of Permittees	Current Period-of-Use	Current Active Use (AUMs)	Selective Management Category
Clover Mountains	Cottonwood	38,820	2	May 1 - Oct. 31	1,296	C
	Pennsylvania	9,841	3	May 1 - Sept. 30	588	C
	Sheep Flat	31,471	3	May 16 - Sept. 15	1,977	I
	Henrie	3,668	2	Nov. 1 - Apr. 30	1,950	M
	Garden Springs	1,135	1	Oct. 16 - May 15	2,809	I
Delamar Mountains	Delamar	83,284	1	Yearlong	5,558	I
	Buckhorn	9,805	1	Yearlong	3,370	I
	Lower Lake	19,984	1	Yearlong	640	C
	Grapevine	13,184	2	Yearlong	900***	I
Meadow Valley Range	Rox	7,480	1	Sep 1-Apr 4	756	C
	Action Farrier	8,920	1	Ephemeral*	-	-
	Delamar	12,745	1	Yearlong	5,558	I
	Breedlove	86,999	1	Yearlong*	864	C
	Boulder Springs	2,560	1	Oct. 1 - March 31	750****	I
	Lower Riggs	2,080	2	Yearlong	2,073	C
	Morrison-Wengert	46,920	1	Yearlong	2,210	C
	Grapevine	4,360	2	Oct. - March	900****	I
	Henrie	13,650	2	Nov. - Apr. 30	1,950	M
Mormon Mountain	Rox	12,162	1	Sept. - Apr. 4	756	C
	Mormon Peak	72,064	1	Yearlong***	600**	C
	Gourd Spring	17,286	2	Sept. 16 - May 15	3,458	I
	Breedlove	20,594	1	Yearlong	864	C
	Henrie	29,932	2	Nov. 1 - Apr. 30	1,950	M
	White Rock	7,941	1	March 1 - May 15	2,880	I
	Upper Mormon Mesa	2,908	1	Ephemeral	———	—
South Pahroc Range	Pahroc	13,439	1	Mid Sept-Mid-June	4,783	I
	Six Mile	15,161	1	Mid Sept-Mid-June	859	I

* Low Use.
** Average use as limited by permit.
*** As adjudicated but has been used March 1 to May 31 and Nov. 1 - Feb. 28.
**** Average use for last two years.

take place within the area and are controlled via the BLM Special Recreation Permit System.

It is anticipated that population explosion in the Las Vegas metropolitan area will lead to further recreation spill-over into the Caliente Resource Area and Lincoln County, thus, leading to more intensive usage.

Soil and Water Resources

Soils

Soils with critical or severe erosion conditions were identified with the Bureau's Watershed Development and Conservation Program. Critical watershed acreage within each WSA are as follows:

WSA	Acres of Critical Watershed	Percent of WSA
Clover Mtns.	1,000	0.01
Delamar Mtns.	19,000	0.15
Meadow Valley Range	7,700	0.04
Mormon Mtns.	0	0.00
South Pahroc Range	5,100	0.10

Water Resources

There is little available surface water within the WSAs due to the aridity of the region, topographic features and geologic formation. The majority of the streams, within the five WSAs are ephemeral with flow occurring primarily during spring snowmelt and summer convective storms. Thirty-seven springs, five seeps, two reservoirs and four perennial streams are within the five WSAs. All four perennial streams, the largest of which is Cottonwood Creek, are in Cottonwood Canyon of the Clover Mountain WSA.

Few of the water sources located within the study area have ever been sampled for water quality. However, conclusions can be drawn from samples collected from similar sources over the last eight years. Generally, water collected from naturally occuring sources in unsafe for human consumption without treatment. Constituents which typically exceed EPA drinking water standards include total coliform, fecal coliform, nitrate-nitrogen, total dissolved solids, chloride, sulfate, iron and manganese. While some of these constituents can be attributed to the natural chemistry of the water, others indicate that trampling and fecal contamination by livestock or other mammals is a primary cause. The quality of water is suitable for consumption by these animals.

Wildlife

The Caliente Resource Area provides habitat for over 375 species of animals (see Caliente Unit Resource Analysis). Diverse vegetation provides habitat for over 300 species of birds, over 50 species of mammals, over 15 species of reptiles and amphibians and several species of fish. For the purpose of this analysis only certain species will be addressed. They were chosen because of their importance in southern Nevada and their value as an indicator species.

Mule deer and desert bighorn sheep are the only big game species present in the five WSAs. Approximately 181,917 acres or 20 percent of the Caliente Resource Area's yearlong mule deer habitat is contained within three WSAs. See Table 3-4 for a break down of wildlife habitat by WSA. Likewise 3,796 acres or 7 percent and 42,456

TABLE 3-4
SIGNIFICANT WILDLIFE HABITAT BY WILDERNESS STUDY AREA (WSA)

WSA	Yearlong Habitat		Deer Summer Habitat		Winter Habitat		Crucial Desert Tortoise Habitat		Crucial Quail Habitat		Yearlong Bighorn Sheep Habitat		Crucial Bighorn Sheep Habitat	
	Acres	Percent*	Acres	Percent	Acres	Percent	Acres	Percent*	Acres	Percent*	Acres	Percent*	Acres	Percent*
Clover Mountains			3,796	7.0%	23,079	5.1%								
Delamar Mountains	64,133	7.0%					11,092	23%	1,250	1.4%	27,454	15%		
Meadow Valley Range	38,325	4.2%							125	0.1%	62,895	35.0%	9,739	29%
Mormon Mountains	79,459	8.8%					6,527	14%	15,537	16.8%	77,039	43%	24,391	71%
South Pahroc Range					19,377	4.3%								
TOTAL	181,917	20.0%	3,796	7.0%	42,456	9.4%	17,619	37%	16,912	18.3%	167,388	93%	34,130	100 %

* Represents the percent of all of that particular type of habitat available in Caliente Resource Area

Source: Caliente Wilderness EIS Team, 1983.

acres or 9.4 percent of the Resource Area's summer and winter habitat, respectively, occur within two WSAs. Most of the WSAs are in Nevada Department of Wildlife's (NDOW) herd management area number 24 which has shown a slight upward trend in recent years (NDOW, 1982). There are proposed vegetation conversions from pinyon-juniper to shrub-grassland on 13,440 acres of mule deer winter range in the Clover Mountains WSA, and in 6,400 acres of bighorn sheep habitat in the Mormon Mountain WSA. These would benefit mule deer and bighorn sheep populations.

Important bighorn sheep habitat lies within the WSAs. Three WSAs have a total of 167,388 acres of yearlong bighorn sheep habitat, or 93% of this total habitat type available within the Caliente Resource area. Two of these same three WSAs have, in addition, 34,130 acres of crucial bighorn sheep habitat or 100% of this total habitat type available in the Resource Area. (see Table 3-4). Competition between bighorn sheep and cattle is direct and wildlife projects, including gap fences and water guzzlers, have been proposed in several WSAs to allow for increases not only in bighorn sheep populations but also for all wildlife which are dependent on available water during critical times. These projects are described in the Mormon Mountains Habitat Management Plan (WH4-T17, 1980) and analyzed in environmental assessment number EA-NV-050-0-50, 1980. The South Pahroc Range WSA is under consideration for bighorn sheep reintroduction. Projects within the Clover Mountains WSA are discussed in the Beaver Dam HMP (N5-WHA-T2, 1976).

There are approximately 17,619 acres of crucial desert tortoise habitat in two WSAs (see Table 3-4). This figure is about 37 percent of the total habitat available for the Resource Area. The desert tortoise is State-listed as "rare" and is classified by the BLM as sensitive.

Approximately 14,007 acres or 15 percent of the total crucial quail habitat for the resource area occurs in two WSAs. Crucial habitat is defined as the quarter-mile area surrounding a water source. (USDI, 1978). At present there are 54 quail guzzlers along the western boundary of the Meadow Valley WSA. Most of these are outside of the WSA.

Other key species which are present in, or pass through, the WSAs include the spotted bat (listed as "rare" by the State), golden eagles (Federally protected), peregrine falcon (Federally listed as "endangered") and other state protected raptors.

Economic Conditions

Economic effects from designation of the five wilderness study areas are confined to Lincoln County. Any potential for population, employment, or income effects beyond this area is negligible.

A rural area of 10,649 square miles, with 1980 population density of 0.35 persons per square mile, Lincoln County's population is projected to grow to 4,040 in 1983, increase to approximately 4,970 in 1990 and 6,680 by the year 2,000. (State Planning Coordinator's Office, November 1980).

Table 3-5 lists the sectoral and total income and employment and relative importance of each sector for Lincoln County. Total County income for 1981 is estimated at $34.8 million with the service industry generating $13.7 million, the largest share (39.2 percent). The mining industry provided 6.2 million (17.7 percent), followed by government at 5.4 million (15.6 percent). Agricultural income totaled 0.8 million, or only 2.2 percent of total County income.

Employment in Lincoln County, for 1981, is estimated at 1,918 persons, with 500 in the service industries (26.1 percent), 398 in government

TABLE 3-5

Lincoln County
Total Income and Employment, 1981

	Income		Employment	
	$1,000	Percent	Persons	Percent
Agriculture	781	2.2	169	8.8
Mining	6,179	17.7	244	12.7
Construction	4,593*	13.2	280*	14.6
Manufacturing	107	0.3	13	0.7
Transportation and Public Utilities	1,781	5.1	70	3.6
Trade	1,869*	5.4	201*	10.5
Services	13,671	39.2	500	26.1
Government	5,418	15.6	398	20.8
Other	450	1.3	43	2.2
TOTAL	34,849	100.0	1,918	100.0

Source: Regional Economic Information System, Bureau of Economic Analysis, 1983

* Bureau of Land Management Estimates.

(20.8 percent), an estimated 280 in construction (14.6 percent) and 244 in mining (12.7 percent). Agriculture employed 169 persons (8.8 percent). The 1981 unemployment rate was a relatively modest 4.9 percent Nevada State Office of Community Services, 1982).

The unemployment rate increased in 1982, reaching 12.2 percent in July. This largely reflected the continued decline of mining activities in response to national economic conditions. The net proceeds of mines assessed valuation decreased from 3.3 million in fiscal year 1980-81 to 1.2 million in fiscal year 1981-82.

Social Values

This analysis is based on various reports and publications including a 1976 Lincoln County Value Survey conducted under a Bureau of Land Management contract by Dr.'s Loren Richart and James Frey, Department of Sociology, University of Nevada, Las Vegas. For complete details of the research methodology of the Richart and Frey report, see Social Economic Profile (SEP), Lincoln County, Nevada, 1976, Appendix A (BLM, Las Vegas District Office). The following analysis reflects, in a general sense, the value and lifestyles of county residents which, together with economic activities and supporting public services, give both shape and force to the community's character.

Social and political attitudes and expectations among county residents are generally conservative and modest. County residents typically appear to view each other as equals and in general do not discuss other residents in terms of social rank, racial, or ethnic origins. However, on an individual basis, those values having to do with origins, kinship, and religion are the common bond around which political and social influences coalesce.

The positive value placed on the small size of local communities; the positive aspects of a rural atmosphere; the appeal of clean air, and moderate weather; the easy access to outdoor recreation; the feeling of friendliness and sociability; the opportunities afforded of doing things "as a family"; and the belief in the natural order of things (particularly the belief that change will proceed modestly and gradually without altering the county's rural character) are the values that seem to be consistently articulated by county residents. The optimistic attitude of area residents toward the historical peak and valley employment patterns of the mining industry is generally expressed in terms of "the future will be pretty much like the past."

Businessmen are politically oriented toward change, while ranchers are politically oriented toward preserving the status quo. Change is a value seldom expressed by the general public. Even among those in the county who favor change, i.e., businessmen, professionals and influential community members, change is often qualified in terms of "progress" that will preserve, or at least not upset, the natural order.

Aside from a modest tourist industry, and the Nevada Training Girls Center, there is no basis for an influx of outsiders to contest the predominance and near universality of the rural, small-town way of life.

In a 1981 survey of Nevadans, Senator Cannon found there was overall support (50 percent support to 41 percent nonsupport) for designating certain U.S. Forest Service Rare II areas as wilderness. A Statewide Comprehensive Outdoor Recreation Plan (SCORP) survey in 1981 recorded the following attitudes to the question "do Nevada's unique natural and unusual areas need preserving?" Statewide 92 percent agree or strongly agree, 3 percent disagree and 5 percent did not respond. Since this study used "preservation of unique natural and unusual areas" rather than "wilderness" its application may be limited (Nevada Division of State Parks, 1982).

In general, Nevada ranchers feel that wilderness designation would directly conflict with the range program. Their rationale was that the constraints that accompany wilderness designation would preclude future range improvements. Any program that either prohibits or makes future implementation of range improvements more difficult is seen as a threat to the western cattle industry. In the long term these constraints are seen as imposing as unwarranted, potentially adverse economic impact on the cattle industry. The Nevada Cattleman's Association feels that WSAs with heavy pinyon-juniper stands should not generally be recommended for wilderness due to their potential for vegetation conversion projects. One of their stated reasons for objecting to the wilderness program is the potential impacts on the range improvement program.

Local ranchers showing up at public meetings or workshops have discussed what strictures may result from wilderness designation with BLM staff. After determining that their operations can continue pretty much as in the past and that no exclusions or reductions in AUMs are going to ensue as a result of wilderness designation, local permittees have expressed either satisfaction or lack of concern with the proposals.

Persons associated with mineral and energy industries, as well as local residents, feel that it is important to leave open to development any lands in WSAs with mineral potential. They feel that wilderness designation would cause areas to be shut off from exploration before there was time to fully determine their mineral potential.

Conservationists favor wilderness designation for all 5 WSAs because of the additional protection from development and other surface disturbing activities which would be afforded these areas. They place high value on the opportunities for solitude and primitive recreation which would be enhanced and preserved for present and future generations through wilderness designation.

Some residents have reacted negatively to the wilderness program simply because it is just one more example of increased Federal regulations infringing upon their rights as private citizens.

Motorized and motor-supported recreational activities represent the most popular use of public lands by local residents. Wilderness designation is generally opposed by this group of users because ORV recreation would be precluded in designated wilderness areas.

Wilderness

Acreages

All of the five Wilderness Study Areas meet the minimum size requirement of 5,000 acres. They are:

WSA Name	Acres
Clover Mountains	84,935
Delamar Mountains	126,257
Meadow Valley Range	185,744
Mormon Mountains	162,887
South Pahroc Range	28,600

Diversity

The following is an overview of the ecological diversity represented by the five WSAs according to the Bailey-Kuchler System of ecosystem classification (Bailey 1976, Kuchler,

TABLE 3-6

APPROXIMATE ECOSYSTEM ACREAGES WITHIN THE CALIENTE RESOURCE AREA WILDERNESS STUDY AREAS*

	Ecosystem		
Wilderness Study Area	Pinyon-Juniper (3130-21)	Great Basin Sagebrush (3130-32)	Creosote Bush (3220-35)
Clover Mountains	63,701	21,234	
Delamar Mountain	6,700	119,557	
Meadow Valley Range	5,744	180,000	
Mormon Mountains	25,487	85,400	52,000
South Pahroc Range	25,000	3,600	
TOTAL	126,632	409,791	52,000
Percent of Total WSA Acrage	40	51	9

* According to the Bailey-Kuchler Classification System

Source: Bureau of Land Management, Reno, Nevada, in REX 2 Computer files (1983)

TABLE 3-7

Existing and Potential Ecosystem Representations in the NWPS

STATUS	ECOSYSTEM					
	Pinyon-Juniper (3130-21)		Great Basin Sagebrush (3130-32)		Creosote Bush (5220-35)	
	No. of Areas	Acres	No. of Areas	Acres	No. of Areas	Acres
Statutory Wilderness	3	43,168	2	7,020	1	311,493
Endorsed by President for Wilderness Designation	7	165,170	6	638,010	4	1,896,740
Potential Sources (Further Study)	95	2,734,254	77	1,269,800	141	4,055,398

Source: Profile 2 Bureau of Land Management computer program, January 12, 1983

1966). This classification system is based upon an integration of the natural factors of climate, vegetation, soils and landform. Numbers refer to the Bailey-Kuchler System.

Three ecosystems are represented by the five WSAs. All five WSAs are partially or completely in the Intermountain Sagebrush Province. Ecosystems represented in this ecoregion include Great Basin sagebrush (3130-32) and pinyon-juniper woodland (3130-21). One WSA is partially in the American Desert Province and has an ecosystem classification of creosote bush (3220-35). See Table 3-6 for a breakdown of each WSA by ecosystem and acreage.

All of portions of the five WSAs totaling 233,266 acres (40 percent of the total study acreage) are within the pinyon-juniper ecosystem (3120-21). This ecosystem is currently represented in the National Wilderness Preservation System (NWPS) by three areas, totalling 43,168 acres (see Table 3-7). There are seven areas, totalling 165,170 acres, which represent this ecosystem that are administratively endorsed for wilderness designation. Additionally there are 92 areas, totalling 2,725,558 acres, which represent this ecosystem that are potential sources of representation in the NWPS.

The Great Basin sagebrush ecosystem (3120-32) is represented in portions of three WSAs totalling 303,157 acres, or 52 percent of the total WSA acreage. This ecosystem is currently represented in the NWPS by two areas totalling 7,020 acres (see Table 3-7). There are six areas, totalling 638,010 acres, which represent this ecosystem that are administratively endorsed for wilderness designation. Additionally there are 61 areas totalling 1,228,332 acres, which represent this ecosystem that are scheduled to be studied for possible inclusion into the NWPS.

The creosote bush ecosystem (3220-35) is represented in portions of one WSA totalling 52,000 acres or 9 percent of the total acres studied (see Table 3-7). This ecosystem is currently represented in the NWPS by one area totalling 311,493 acres. There are four areas, totalling 1,896,740, which represent this ecosystem that are administratively endorsed for wilderness designation. Additionally there are 128 areas, totalling 4,000,196 acres, which represent this ecosystem that are scheduled to be studied for possible inclusion into the NWPS.

Proximity to Population Centers

Population centers are defined as Standard Metropolitan Statistical Areas (SMSAs) which have populations of 100,000 or more. All five WSAs are within one day's driving time (250 air miles) of one or more SMSAs. Table 3-8 outlines which SMSAs are with 250 miles of the five WSAs, in addition to listing other wilderness opportunities within 250 miles of the SMSAs.

Nevada Statewide Wilderness Summary

The Jarbridge Wilderness Area, administered by the USFS, located in northeastern Nevada, is the only area in Nevada designated as wilderness. The Jarbridge Wilderness Area totals 64,847 acres or .09 percent of Nevada Federal lands. Currently, there are an estimated eight million acres in Nevada under consideration for wilderness designation, as either administratively endorsed as suitable or scheduled for further planning.

Wilderness Study Area Descriptions

CLOVER MOUNTAINS (NV-050-0139)

The Clover Mountains WSA is located about 105 miles northeast of Las Vegas, in the southern extension of the Clover Mountains. The WSA is

TABLE 3-8

PROXIMITY TO POPULATION CENTERS AND OTHER WILDERNESS OPPORTUNITIES

WSA1/	SMSA2/ Within 250 Miles	Statutory Wilderness		Administratively Endorsed Wilderness		Future Study	
		Areas	Acres	Areas	Acres	Areas	Acres
Clover Mountains	Las Vegas, NV	14	1,853,239	54	5,931,672	381	14,227,454
Delamar Mountains	Las Vegas, NV	14	1,853,239	54	5,931,672	381	14,227,454
	Porterville-Visalia, CA	21	2,216,745	44	5,747,916	270	9,261,078
	San Bernardino, CA	13	1,642,021	30	5,038,151	289	10,436,273
Meadow Valley Range	Las Vegas, NV	14	1,853,239	54	5,931,672	381	14,227,454
	Porterville-Visalia, CA	21	2,216,745	44	5,747,916	270	9,261,078
	San Bernardino, CA	13	1,642,021	30	5,038,151	289	10,436,273
Mormon Mountains	Las Vegas, NV	14	1,853,239	54	5,931,672	381	14,227,454
South Pahroc Range	Las Vegas, NV	14	1,853,239	54	5,931,672	381	14,227,454
	Porterville-Visalia, CA	21	2,216,745	44	5,747,916	270	9,261,078

1/ WSA - Wilderness Study Area
2/ SMSA - Standard Metropolitan Statistical Area

Source: Bureau of Land Management, "Profile 2" A computer program, 1983.

somewhat rectangular, measuring approximately 3-16 miles east to west and 6-14 miles north to south. Elevation ranges from 3,000 to 7,600 feet.

There are two major landform regions found within the WSA. The first, called the Clover Mountain Central Area, consists of rugged peaks, deep twisting canyons, rolling hills, and steep cliff faces. This area contains six canyons, Cottonwood Creek, Pine Creek, Ash Creek, Fife Creek, Sheep Creek, and Coldwater Creek. This, the Cottonwood Creek complex, is significant because it is the only perennial creek system in any of the five WSAs. The second region, called the Lower Clover Mountain Area contains some rolling, gentle, hills, several canyons, and the heads of several bajadas.

Vegetation is diverse. Pinyon-juniper is the most extensive vegetation type, covering approximately 75 percent of the area. The southeast portion of the WSA is covered by desert shrubs, predominately blackbrush and Mexican cliffrose. The northern portion of the unit is covered by mountain shrubs consisting of Gambel oak, serviceberry, ceanothis and shrub live-oak. Most significant in the area are the riparian zones in the Cottonwood Creek complex with scattered stands of ponderosa pine, cottonwood, willow and ash. Other portions of the WSA on the eastern side have quaking aspen..

Wilderness Values

Naturalness

Approximately 95 percent of the WSA is unaffected by manmade features. There is an historic homesite with an associated mostly washed out road in the lower region. Noticeable imprints associated with cattle use are apparent along the banks of Pine and Ash Creeks.

Outside sights and sounds are primarily restricted to the Pennsylvania Mining District on the northwest corner of the WSA and not observable from 99 percent of the WSA. Operations there are minimal presently, but activity associated with the mine could impair the quality of the wilderness experience within the WSA if full scale production was initiated.

Outstanding Opportunities for Solitude and Primitive and Unconfined Recreation

The size of the area in addition to vegetative and topographic screening provides outstanding opportunities for solitude in all of the unit, with these opportunities falling to about 50 percent in the southern quarter. Secluded spots are easily locatable because of the many canyons in the WSA.

Outstanding and diverse primitive recreational activities are present. Backpacking and dayhiking are outstanding. Other available opportunities are rock scrambling, nature study, photography, horseback riding, and hunting. The Clover Mountains is the prime mule deer harvesting unit for Lincoln County.

Manageability

At present motorized access is not a problem in the WSA. However, in the future, relatively flat terrain along the south and east portions of the WSA could allow some problems associated with ease of access. The point of origin for such problems would most likely be Cottonwood Canyon. There are no private lands within the WSA. The entire WSA is currently under post-FLPMA oil and gas leases for which activities are under restrictive regulations. Approximately 1,700 acres (2 percent) of the WSA were covered by post-FLPMA mining claims, but this group of claims was dropped.

Special Features

The following supplemental values, occurring within the WSA, add to the wilderness experience within this WSA: Zoological, geological, botanical, and cultural features. Peregrine falcons (classified as "endangered" by the Federal Government) have been sighted in the area. The WSA contains a rare stand of quaking aspen, which is rare in this district, and several riparian zones. There is one historic cabin in this WSA relating to the early Mormon settlement of the 1860's. The geologic structure of the Clover Mountains and associated Caliente caldera is also of scientific interests.

Other Resource Values

Energy and Mineral Resources

The following list and description of energy and mineral resources is categorized according to method of acquisition or disposal (i.e., locatable, leasable or salable) and is ordered according to the classification described previously (Tables 3-1 and 3-2).

Locatable Minerals

Potential barite resources may occur in unknown quantities at the Lucky Boy prospect within the southwest portion of the Clover Mountains (Group-4 commodity, Class-3 area). Silica and lime resources may occur in the respective quartzite or carbonate rock units along the west boundary and lime resources may occur in carbonate rock units in the south-center of this WSA (Group-4 commodity, Class-3 area). Other locatable mineral resources may possibly occur in the northwest and south-central portions of this WSA in areas adjacent to the Pennsylvania and Cherokee/Viola Mining Districts, but there is a lack of qualified data for use in classification of mineral potential (Group-1 to 4 commodities, Class-4 areas). Other locatable mineral resources speculatively may exist in the remaining portions of the WSA, although there is no data to verify this (Group 1-4 commodities, Class-5 areas).

Leasable Minerals

Potential alunite (alumina) resources may occur in this WSA in volcanic rocks associated with similar rocks to the east. These rocks to the east are under application for a potassium prospecting permit for alunite. There is a lack of qualified data for use in classification of alunite potential (Group-1 commodity, Class-4 area). Oil and gas resources may possibly occur in this WSA. The area was classified by the USGS as having potential for speculative oil and gas resources but there is a lack of qualified available data for use in classification of oil and gas potential (Group-1 commodity, Class-4 area). Geothermal resources probably do not occur in this WSA, although there is no data to verify this (Group-1 commodity, Class-5 area).

Salable Minerals

Sand and gravel resources exist to a limited extent in alluvial fan and large intermitent wash areas in the WSA, but without a significant market demand (Group-4 commodity, Class-2 areas). Other common variety minerals may exist in unknown quantities in bedrock areas throughout most of the WSA (Group-4 commodity, Class-3 area).

Livestock

Two allotments (Garden Springs, Sheep Flat) have been identified through Coordinated Resource Management Planning (CRMP) as needing an intensive management system. Existing projects include one spring and trough and one historic corral and historic line-shack. Two projects were proposed through CRMP which consists of five to six miles of fencing in the south-central portion of the WSA and three to five miles of pipelines in the western portion.

Wild Horses

The area contains approximately 65 wild horses and was identified, through the Caliente MFP, as needing an intensive herd management plan.

Wildlife

There is an existing wildlife HMP encompassing the Clover Mountains WSA -Beaver Dam HMP (N5-WHA-T24, 1976).

DELAMAR MOUNTAINS (NV-050-0177)

The Delamar Mountains WSA is located about 75 miles northeast of Las Vegas, Nevada and contains the southern extension of the Delamar Mountains. The WSA is elongated, measuring approximately 3 to 16 miles east to west and 23 miles north to south. Elevation ranges from 2,600 to 6,600 feet.

The study area's diverse landscape offers a variety of landforms. The core area contains a broad rolling mesa-like plateau dissected by several ridges and washes. West of this plateau is an abrupt cliff falling sharply to a gently sloping bajada. The southern end contains several spectacular canyons originating from the central core. The eastern portion of the WSA contains rugged butte shaped mountains above the mesa like area with a series of ridges and small canyons.

Vegetation is diverse. Desert shrub is the most extensive vegetation type and is dominated by blackbrush. The northern end of the WSA is covered with a big sagebrush community. Pinyon-juniper stands cover the north-central part of the WSA. Annual grassland and the salt desert shrub community vegetate the remainder of the unit.

Wilderness Values

Naturalness

Approximately 65 to 70 percent of the WSA is unaffected by manmade features. The WSA contains two reservoirs, ten quail guzzlers, a five-mile bladed cherrystem road to one of the reservoirs, a three-mile cherrystem road to Willow Springs, and several ways.

The outer perimeter of the WSA is affected by outside sights and sounds. Affecting the naturalness of the WSA are the Pony Well cherrystem road in the core area; the western boundary road (highway 93) and its associated powerline corridor which may become more significant in the future.

Imprints within WSA: In the plateau core area, Pony Reservoir and well site road cherrystem (T.8S., R.64E., Sec. 17, 18, 19, T.8S., R.63E., Sec. 24, 25, 36, T.9S., R.64E., Sec. 6, 7) is a five-mile bladed, user maintained road into the Pony Well Site and pipeline. A way also angles southwest away from this well site and can be seen for several miles. An old earth stock reservoir can be found in (T.9S., R.64E., Sec. 17) with another way leading from Pony Well to the reservoir. Forming a portion of the northeastern boundary, an old range project in the form of a fenced seeding impacts the WSA along with another fence (T.7S., R.64E., Sec. 20, 25) and associated way also can be seen.

On the western bajada, several, almost obscure, ways try to make it up into the WSA, but natural terrain stops them after a half mile or so. Some of the larger washes do show a single track or two of random ORV exploration or hunting enthusiasts.

Along the southern bajada, there are occasional vehicle tracks leading cross country toward the interior of the unit but the only noted vehicular access taking place is up the Bomber

Wash (T.10S., R.63E., Sec. 33) for hunter access. This impact is very light and not of a significant nature. A cherrystem (T.10S., R.64E., Sec. 15, 9, 16, 17, 8) three-mile user maintained road to Willow Spring impacts the east bajada.

There is also a short one-mile access road to an earth stock reservoir in the east mountain region.

Imprints Outside WSA: The west side of the entire WSA abuts against one of the major utility power planning corridors running north/south through the western United States. When construction is complete, at least one 500 KV DC powerline will run the length of the WSA. The boundary roads, as detailed under the Physical Environment, are also visible. The entire WSA is frequently overflown by military training jets from Nellis Air Force Base. It is not unusual to see these jets flying at 50 to 200 feet above the surface of the terrain.

Location and Size of Affected Areas: In the plateau core area, the cherrystem road, well site, and stock reservoirs impact the immediate area and portions of the unit where topographic and vegetative screening are insufficient to cover the imprints. The entire west bajada is affected by the boundary road and the powerline corridor. The southern bajada is also affected by the boundary roads and the signs of vehicular travel. The cherrystem road into Willow Spring also affects the southeastern bajada. The mountain areas to the east are only affected in the area immediately adjacent to the stock reservoir, and the associated way leading to the development.

In summary, the outside influences affect only the immediately adjacent areas and about 65 to 70% of the WSA is unaffected by human imprints.

Potential for Separating Affected Areas: The western boundary of the WSA could be drawn inward to the base of the cliff area to exclude the imprints from random ORV use, the excessive sights and sounds from the powerline corridor, highway 93, and the Delamar Valley boundary road.

Outstanding Opportunities for Solitude and Primitive and Unconfined Recreation

Adequate vegetative screening is not available anywhere within the WSA. Several deep twisting canyons that flow out of the core region offer outstanding topographic screening for a small portion of the WSA, in addition to portions of the eastern mountainous region. The western ridges and the canyons on the lower northwest provide outstanding screening. The central mesa tops and the bajadas have limited topographic screening. Secluded spots may be found in Bomber Wash and other washes and in the more mountainous regions on the west and east sides of the WSA.

Primitive recreational activities include dayhiking, rock climbing and scrambling, backpacking, nature study, hunting, and horseback riding. Opportunities to observe and photograph desert bighorn sheep exist within the WSA. Primitive recreation opportunities range from low to outstanding.

Manageability

At present motorized access is not a problem in the WSA. Although increased use in the future could become a significant problem in the plateau core area adjacent to the Pony Well road and on the bajadas found on the east, west, and south sides of the WSA. Access to these areas would be gained through cherrystem roads, existing ways, and many washes.

The WSA is bordered on the northwest side by a powerline and associated 100-foot-wide right-of-way (highway 93). Current projections indicate that at least one additional 500 KV line may be constructed and that as many as three 500 KV lines may be constructed in the future.

There are no private lands within the WSA. The entire WSA is currently covered by post-FLPMA oil and gas leases and no past drilling activities have occurred. There are no mining claims within the WSA. There is a potential manageability conflict, a court agreement that requires development of a water supply near the Pony Well road.

Special Features

The following supplemental values, occurring within the WSA, add to the wilderness experience within this WSA: Zoological, geological, botanical and cultural features. Desert tortoise inhabit the bajadas on the south and western portions of the area. Praire falcons and golden eagles may also pass through the WSA along the southern boundary. One State protected plant species, Astragalus nyensis Barneby (Nye milkvetch) is found within the WSA. Butte-like geologic formations and mesas, occurring only within this WSA, add visual diversity to the landform features. Extensive faulting during the development of the ancient Kane Springs Caldera structure is of interest and being studies. Over one dozen prehistoric sites have been recorded within the study unit.

Energy and Mineral Resources

The following list and description of energy and mineral resources is categorized according to method of acquisition or disposal (i.e., locatable, leasable, or salable) and is ordered according to the classification described previously (Tables 3-1 and 3-2).

Locatable Minerals

Silica and lime resources may occur in the respective quartzite or carbonate rock units within the west, south, and southeast flank of the Delamar Mountains (Group-4 commodity in Class-3 areas). Perlite may possibly exist within the volcanic rock units, but the known data is unqualified for use in classification of potential (Group-4 commodity in Class-4 area). Uranium may possibly occur in this WSA, but the known data is unqualified for use in classification of potential (Group-1 or 3 commodity in Class-4 area).

Leasable Minerals

Oil and gas resources may possibly occur in this WSA. The area was classified by the USGS as having potential for speculative oil and gas resources, but there is a lack of qualified available data for use in classification of potential (Group-1 commodity in Class-4 area). Phosphate rock resources may possibly exist in unknown quantitites within the Chainman Shale in the south center of the WSA, but there is a lack of qualified data for use in classification of potential (Group-3 commodity in Class-4 area). Geothermal resources probably do not occur in this WSA, although there is no data to verify this (Group-1 commodity in Class-5 area). The USGS has not classified the area as prospectively valuable for geothermal or other leasable mineral resources.

Salable Minerals

Sand and gravel resources exist in substantial quantities within material site rights-of-ways, within areas identified for free use permitting and in similar areas along the southwest and southeast transportation corridors bounding the WSA (Group-4 commodities in Class-1 areas). Other sand and gravel resources exist in significant quantities within the remaining alluvial fan areas, but without a significant market demand (Group-4 commodities in Class-2 areas). Other common variety minerals may exist in unknown quantities in bedrock areas (Group-4 commodities in Class-3 areas).

Livestock

A portion of one allotment (Grapevine) is within the WSA and is currently managed under a three pasture grazing system. Portions of two allotments (Buckhorn and Lower Lake) are within the WSA and were identified through CRMP as needing an intensive management system. The Delamar allotment has an existing AMP. Development and implementation of this AMP and present stocking levels were dictated to the bureau through a negotiated court settlement and dismissal on a grazing appeal filed and ordered August 16, 1979 (Nevada 5-75-3). This court settlement detailed numbers of AUM's, development and implementation of an AMP, an interim grazing system, certain necessary projects to be included in the AMP, and a time frame for completion of each of these steps. In accordance with these requirements, an AMP was completed and accepted by both parties on February 5, 1981. One improvement identified in the AMP was a permanent water source in Bomber Wash (identified as a well which when drilled was not produceable). Without development of a water source in this area, this pasture will be unusable thus precluding full implementation of the AMP.

Existing projects consist of two miles of fence, one water haul, two reservoirs, and two springs. Proposed projects, identified through CRMP and an AMP developed in 1981, include one water source in Bomber Wash and two and one half miles of fence in the northern end of the WSA.

Wildlife

There is a Management Framework Plan decision calling for a bighorn sheep reintroduction in the Delamars.

MEADOW VALLEY RANGE (NV-050-0156)

The Meadow Valley Range WSA is located about 55 miles northeast of Las Vegas, Nevada and contains the entire Meadow Valley Range. It is shaped like a boomerang, measuring approximately 8-12 miles east to west and arching about 34 miles north to south. Elevation ranges from 3,400 to 5,700 feet.

There are three major landform regions found within the WSA. The first, called the Meadow Valley Range, forms the north and west side of the WSA and contains rugged peaks and canyons in limestone, dolomite, quartzite, shale and volcanic rocks. The second region, called the Bunker Hills, on the south side of the unit, is one of low angular hills consisting of dissected anticlines and synclines characterized by badland-like erosion features. The third region consists of a broad sweeping bajada sloping toward the south and southeast from the Meadow Valley Range.

Vegetation is diverse. The desert shrub community dominates the majority of the WSA, represented by blackbrush and Joshua trees. Lower areas of the WSA are dominated by creosote bush. Pinyon-juniper covers the northernmost and higher elevations of the WSA. The major wash areas in the WSA are covered by rabbitbrush. The northwest portion of the WSA is covered by annual grasses, mostly composed of cheatgrass.

Wilderness Values

Naturalness

Approximately 95 percent of the WSA is unaffected by manmade features. There are several ways crossing the area from Avertt Reservoir to Hackberry Canyon. The WSA contains an old quarry and drill site with an associated cherrystem road.

The WSA is relatively free of outside sights and sounds. Exceptions are the

WSA boundary roads, frequent low level military flights, and light pollution in the southern end from the Reid Gardner Generating Station and nearby communities.

Outstanding Opportunities for Solitude and Primitive and Unconfined Recreation

Adequate vegetative screening is not available anywhere within the WSA. Outstanding topographic screening is available in the more precipitous terrain in the Meadow Valley Range Region of the WSA due to a series of cliffs, peaks, steep canyons, and rock outcrops. The remainder of the WSA provides limited screening, but due to its vast size, a certain amount of solitude may be experienced. Secluded sites are easily located in the Meadow Valley Range, Bunker Hills, and Hackberry Canyon.

Primitive recreational activities include dayhiking, backpacking, rock scrambling, nature study, and photography. This WSA is a good area for hunting deer and upland game birds. In addition five desert bighorn sheep tags are issued for this area annually.

Manageability

At present there is very little motorized use taking place within the WSA except on the northeastern portion. Increased use in the future could cause problems in the Bunker Hills and bajada areas of the WSA because of the many washes and relatively flat terrain. However, the edge of the WSA along Meadow Valley Wash is bluffy and not easily crossed. The WSA is bordered on the east side by a Union Pacific Railroad right-of-way. There are no private lands within the WSA. The WSA is covered by post-FLPMA oil and gas leases. There are approximately 1,100 acres (.6 percent) of post-FLPMA mining claims.

Special Features

Geological, botanical, zoological and cultural features are the WSA's most significant values. Two State protected plants are found in the vicinity of the WSA. They are *Arenaria stenomerees Eastwood* (Meadow Valley Range sandwort) and *Astragalus nyensis Barneby* (Nye milkvetch). Desert tortoise inhabit the lower elevation of the southern area and golden eagles and praire falcons may also pass through. The WSA is considered sensitive for cultural resources because of its proximity to Meadow Valley Wash.

Energy and Mineral Resources

The following list and description of energy and mineral resources is categorized according to method of disposal (i.e., locatable, leasable, or salable) and is ordered according to the classification described previously (Tables 3-1 and 3-2).

Locatable Minerals

Perlite resources exist in known quantities within the north portion of the Meadow Valley Mountains but with unknown quality and without significant market demand (Group-4 commodity in Class-2 area). Silica and lime resources may occur in respective quartzite and carbonate rock units within the southwest and center east portions of the WSA (Group-4 commodities in Class-3 areas). Other less known potential perlite resources may occur associated with the above mentioned deposit (Group-4 commodity in Class-3 area). Potential gypsum resources may occur in the central-east portion of the WSA in Permian redbeds (Group-4 commodity in Class-3 area). Other less known gypsum resources may possibly exist in Permian redbeds within the WSA associated with the known deposit, but there is a lack of qualified data for use in classification of this potential (Group-4 commodity in Class-4 area). Unknown locatable mineral resources may possibly exist within mining claims overlapping into the WSA, on the central lower west flank, but the known data is unqualified for use in classification of potential (Group 1-4 commodities in Class-4 area). Potential uranium resources may possibly exist in the WSA, but the known data is unqualified for use in classification of potential (Group-1 and 3 commodity in Class-4 area).

Leasable Minerals

Oil and gas resources may possibly occur in this WSA. The area was classified by the USGS as having potential for speculative oil and gas resources but there is a lack of qualified available data for use in classification of potential (Group-1 commodity in Class-4 area). Phosphate rock resources may possibly exist in unknown quantities within the Chainman Shale in the south-central portion of the WSA, but there is a lack of qualified data for use in classification of potential (Group-3 commodity in Class-4 area). Geothermal resources probably do not occur in this WSA, although there is no data to verify this (Group-1 commodity in Class-5 area). The USGS has not classified the area as prospectively valuable for geothermal or other leasable minerals.

Salable Minerals

Sand and gravel resources exist in significant quantities within alluvial fan areas, but without a significant market demand (Group-4 commodities in Class-2 area). Other common variety minerals may exist in unknown quantities in bedrock areas (Group-4 commodity in Class-3 area).

Livestock

Small portions of two allotments are currently under intensive mnagement systems (an AMP on the Delamar allotment and a pasture grazing system on the Grapevine allotment. Portions of two allotments (Boulder and Lower Riggs) have been identified through CRMP as needing formal grazing systems. Existing projects consist of two spring developments in Hackberry Canyon and a corral associated with one of these springs. Several projects have been proposed in this area through CRMP consisting of five reservoirs (one south of Sunflower Mountain, two at Black Mountain and two south of Hackberry Canyon), two spring developments with two and one-half miles of pipeline, and five to ten miles of allotment boundary fences at Sunflower Mountain and Hackberry Canyon.

Wild Horses

The area contains approximately 65 wild horses and was identified, through the Caliente MFP, as needing an intensive herd management plan.

MORMON MOUNTAINS (NV-050-0161)

The Mormon Mountains WSA is located 75 miles northeast of Las Vegas and contains the entire Mormon Mountain Range. The WSA is somewhat round in shape, measuring approximately 12 to 16 miles east to west and 15 to 20 miles north to south. Elevation ranges from 2,200 to 7,500 feet.

There are five major landform regions found within the WSA. The first is the Mormon Mountains core area consisting of rugged limestone peaks and numerous canyons. The second, called the Moapa Peak Region, consists of a solitary, spire shaped, limestone peak on the south end of the WSA. The other three landforms are all bajadas, but vary in size and topography.

Most of the WSA is covered by a desert shrub plant community consisting mainly of blackbrush, bursage, and Joshua trees. Creosote bush may be found in the northeastern portion of the WSA. Pinyon-juniper stands are common in the central core area. There is a small stand of ponderosa pine near the summit of Mormon Peak.

Wilderness Values

Naturalness

Approximately 50 to 60 percent of the WSA is unaffected by manmade features. Many manmade intrusions lie within the WSA, although most have been technically excluded by cherrystemming. These features include roads, ways, water developments, mines, and mining disturbances.

Portions of the WSA are affected by outside sights and sounds associated with the Union Pacific Railroad right-of-way on the west boundary, low flying military aircraft and the above mentioned features.

Outstanding Opportunities for Solitude and Primitive and Unconfined Recreation

Good vegetative screening may be found in areas above the 5,000 foot elevation due to pinyon-juniper. The portion of the WSA below 5,000 feet does not provide adequate vegetative screening. Topographic screening in the Mormon Mountains core and Moapa Peak areas is outstanding throughout due to high cliffs, peaks, and deep canyons. Only limited screening is available on the lower hills and bajada areas. Secluded spots are easily locatable, especially in the core area.

Primitive recreational activities include dayhiking, backpacking, rock climbing and scrambling, hunting, and horseback riding. The WSA offers outstanding opportunities for spelunking/caving within the Mormon Mountains core area. The WSA is an outstanding example of an isolated high desert mountain range which lends itself to excellent photographic opportunities.

Manageability

At present motorized access is not a problem in the WSA. Control on the lower bajadas in the future would be difficult as a result of the many ways and cherrystem roads present in the WSA. The WSA is bordered on the west side by a Union Pacific Railroad right-of-way. There are no private lands within the WSA. The entire WSA is currently covered by post-FLPMA oil and gas leases. Approximately 11,500 acres (7.1 percent) of the WSA is covered by post-FLPMA mining claims. Two pre-FLPMA lode claims exist (41.3 acres, part of which is a cherrystem) in the WSA.

An intensive habitat management plan is in effect for this area. This plan is designed to reduce competition between cattle and bighorn sheep and to increase the quality and quantity of sheep habitat through installation of management facilities. Wilderness designation will require non-impairment of wilderness values.

Special Features

Supplemental values, within the WSA, add to the wilderness experience. The WSA contains numerous limestone caves which are primarily found in the core area. Botanical features in the WSA include the Meadow Valley Range sandwort (Arenaria stenomeres) which is a State protected species. Ponderosa pine is also found in the WSA. Zoological features include the desert tortoise, and desert bighorn sheep. The spotted bat (classified "endangered" by the State) may possibly exist in the WSA. The WSA is extremely rich in cultural resources. Over 2,000 prehistoric sites have been found including agave roasting pits, shelter caves, pictograph and petroglyph sites to name a few.

Energy and Mineral Resources

The following list and description of energy and mineral resources is categorized according to method of acquisition or disposal (i.e., locatable, leasable, or salable) and is ordered according to the classification described previously (Tables 3-1 and 3-2).

Locatable Minerals

Potential copper resources may occur in unknown quantities at the cherrystemmed Whitmore prospect in the south of the Mormon Mountains (Group-1 commodity in Class-3 areas). The known data for the following areas is unqualified for use in classification of potential: thorium in the Precambrian igneous-metamorphic complex along lower west flank and an area west and near the Whitmore Prospect (Group-1 commodity in Class-4 area); uranium within the WSA (group 1 and 3 commodity in Class-4 area); gypsum in Permian redbeds near the southwest WSA boundary and near Carp in the northernmost portion (Group-4 commodity in Class-4 area); and other locatable minerals in the igneous-metamorphic complex or within existing or abandoned mining claims (Group-1 to 4 commodities in Class-4 area).

Leasable Minerals

Oil and gas resources may possibly occur in this WSA. The area was classified by the USGS as having potential for speculative oil and gas resources, but there is a lack of qualified data for use in classification of potential (Group-1 commodity in Class-4 area). Geothermal resources probably do not occur in this WSA, although there is no data to verify this (Group-1 commodity, Class-5 area). The USGS has not classified the area as prospectively valuable for geothermal or other leasable mineral resources.

Salable Minerals

Sand and gravel resources exist in significant quantities within alluvial fan areas, but without a significant market demand (Group-4 commodity, Class-2 area). Other common variety minerals may exist in unknown quantities in bedrock areas (Group-4 commodity, Class-3 areas).

Livestock

Portions of two allotments (White Rock and Gourd Spring) have been identified through CRMP as needing an AMP. All of one allotment (Mormon Peak) was identified in the Caliente MFP for development of an AMP in conjunction with an HMP to alleviate conflicts between desert bighorn sheep and cattle. Existing projects include one and one-half miles of allotment fences, four springs and two miles of pipeline. All four existing springs were identified through CRMP and in the HMP to be redeveloped to include some storage and pipeline facilities. Several short gap fences are also identified, most of which have been installed.

Wild Horses

The area contains approximately 27 wild horses and was identified, through the Caliente MFP, as needing an intensive herd managment plan.

Wildlife

The existing intensive HMP for the Mormon Mountains includes construction of quail guzzlers, big game guzzlers, fencing projects and primitive rock catchments for the improvement of existing wildlife habitat. To date three big game guzzlers (two 10,000 gallon and one 50,000 gallon) and seven and one half miles of fencing have been constructed. Approximately twenty-five percent of the HMP has been implemented at this time. The remaining 75 percent of the HMP, to be implemented, is outside of the core area of the WSA.

SOUTH PAHROC RANGE (NV-050-0132)

The South Pahroc Range WSA is located about 100 miles northeast of Las Vegas and contains the south end of the Pahroc Mountain Range. It is roughly oblong in shape, measuring two to four miles east to west and seven miles north to south. Elevation ranges from 4,900 to 7,950 feet.

There are two major landform regions within the WSA. First is the South Pahroc Range core area consisting of massive, weathered columnar fields of rounded and oblong shaped rocks ranging in size up to several yards in diameter. The second region consists of a spectacular cliff-faced escarpment on the east side of the WSA.

Vegetation is diverse. Pinyon-juniper is the most extensive vegetation type, occupying approximately 72 percent of the WSA and most of the core area. The eastern, western, and northern fringe area of the WSA are dominated by big sagebrush. Southern desert shrub and salt desert shrub are found at the lower elevations. Scattered stands of white fir occur within the WSA.

Wilderness Values

Naturalness

Approximately 95 percent of the WSA is unaffected by manmade features. There is a one-mile way protruding inward from the north end. Two pipelines run along the east and west border for several miles.

Outside sights and sounds are primarily restricted to the Delamar Perlite Mining Area located just outside the northeast boundary of the WSA. The mine consists of open pit and underground operations. This activity is visible from a very small portion of the WSA. Other impacts include a powerline right-of-way, pipeline, fences, corrals, reservoir, and a large seeding. The WSA is frequently overflown by low-level military aircraft.

Outstanding Opportunities for Solitude and Primitive and Unconfined Recreation

Pinyon-juniper vegetation offers moderate to adequate vegetative screening throughout the majority of the WSA. Topographic screening in the core area is outstanding throughout due to the ruggedness of the terrain. The escarpment provides excellent topographic screening in every direction but easterly. Secluded areas are easily locatable in all areas of the WSA with the exception of the east side of the escarpment.

Backpacking and dayhiking are excellent throughout the WSA. Other forms of primitive recreation include rock climbing and scrambling, nature study, photography, hunting, and horseback riding. In summary, this WSA is unique within the Resource Area in the sense that it is an "island in the sky" with unlimited opportunities for primitive and unconfined recreation.

Manageability

At present motorized access is not a problem in the WSA. In addition, the ruggedness of the terrain precludes any motorized access problems in the future. The WSA contains 160 acres of pre-FLPMA mining claims associated with the Delamar perlite mining area and may present a manageability problem in the future. There are no private lands in the WSA. The WSA is bordered on the north by a 40-foot-wide powerline right-of-way. The WSA contains 2,530 acres with oil and gas leases on the extreme west.

Special Features

This WSA offers a prime example of spheroidally weathered welded-ash tuffs looking much like granite boulders. Several stands of white fir are found in the WSA and are of regional importance due to their scarcity. This area supports mule deer and the northern spotted bat (classified "rare" by the State) may exist in the WSA. This WSA is archaeologically sensitive due to the presence of prehistoric sites and its proximity to available waters.

Energy and Mineral Resources

The following list and description of energy and mineral resources is categorized according to method of acquisition or disposal (i.e., locatable, leasable, or salable) and is ordered according to the classification described previously (Tables 3-1 and 3-2).

Locatable Minerals

Perlite resources exist in significant quantities but without significant market demand along the northeast flank of the WSA (Group-4 commodity in Class-2 area). These resources occur adjacent to the currently mined Paramount Perlite Co. deposit, exterior to this WSA and is the only currently produced known Class-1 deposit in the Caliente Planning Unit. Other potential perlite resources may occur along the same range front to the south (Class-3 area). Uranium may possibly exist in the WSA, but the known data is unqualified for use in classification of potential (Group 1 & 3 commodity in a Class-4 area).

Leasable Minerals

Oil and gas may possibly exist at depth within this WSA. The area was classified by the USGS as having potential for speculative oil and gas resources, but there is a lack of qualified available data (Group-1 commodity in Class-4 area). Geothermal resources probably do not occur in this WSA, although there is no data to verify this (Group-1 commodity in Class-5 area). The USGS has not classified this area as prospectively valuable for geothermal resources.

Salable Minerals

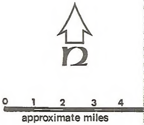
Sand and gravel resources exist in significant quantities within alluvial fan areas but without a significant market demand, (Group-4 Mineral, Class-2 Area). Other common variety minerals may exist in unknown quantities in the core areas (Group-4 in Class-3).

Livestock

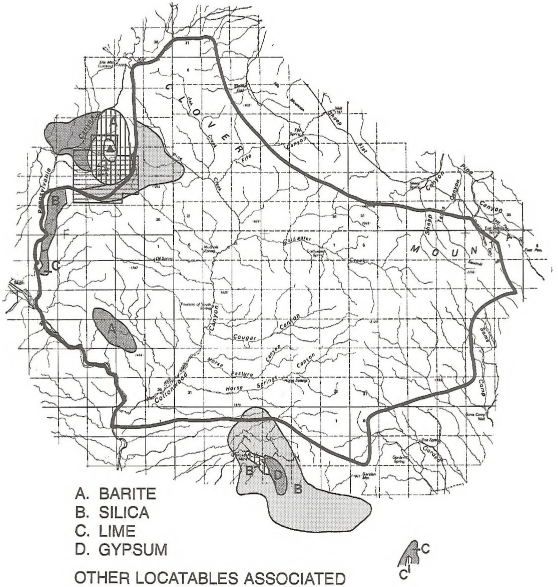
Two allotments (Six Mile and Pahroc) have been identified through CRMP as needing and AMP. One short section of fence (approximately 1/4 mile) exists in the north end of the WSA.

Wildlife

There is a proposed bighorn sheep reintroduction for this WSA.

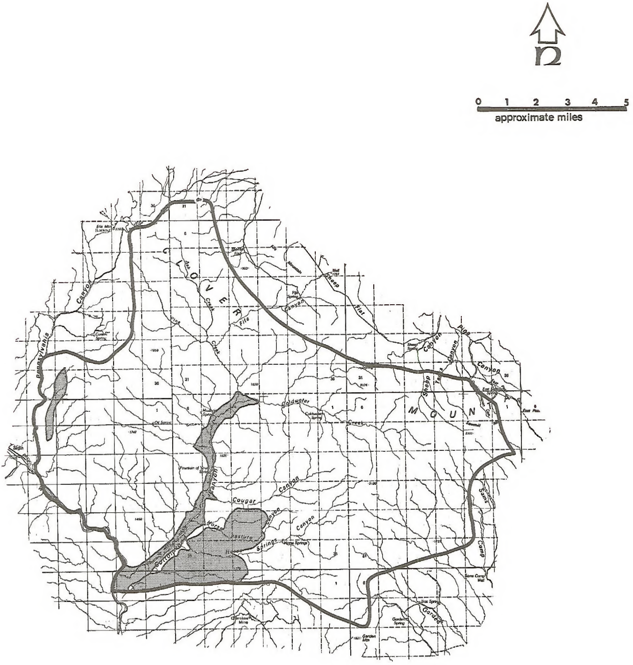


RELATIVE POTENTIAL	MINERAL TYPE *
▲ 1	PAST PRODUCTION (silver)
▥ 2	MINING DISTRICTS A. PENNSYLVANIA (gold, silver, copper) B. CHEROKEE C. WELLS CARGO (fluorspar)
■ 3	A. BARITE B. SILICA C. LIME D. GYPSUM
▒ 4	OTHER LOCATABLES ASSOCIATED WITH MINING DISTRICTS A. PENNSYLVANIA B. CHEROKEE/VIOLA (gold, silver, copper, lead, mercury)
5	OTHER LOCATABLES (in all areas)
▤	MINING CLAIM GROUP OVERLAPPING WSA



LOCATABLE MINERAL POTENTIAL
MINING CLAIMS
CLOVER MTNS. NV-050-0139

*REFER TO TEXT FOR EXPLANATION

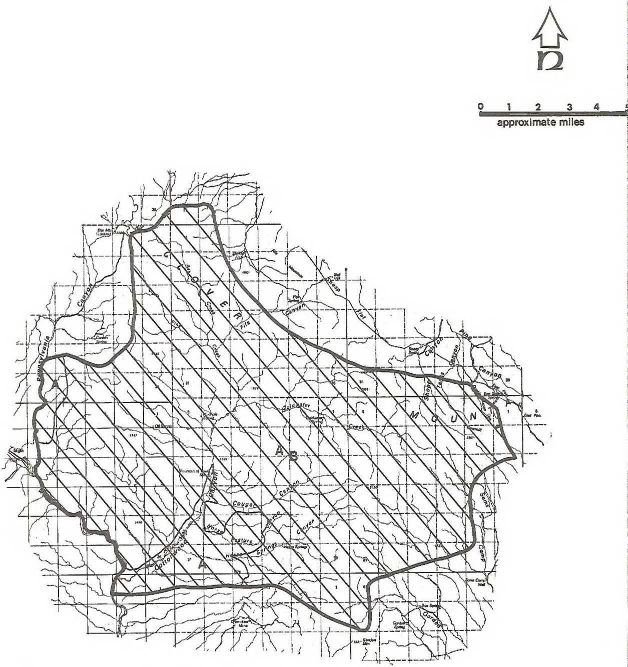


RELATIVE POTENTIAL		MINERAL TYPE *
▨	2	SAND AND GRAVEL
☐	3	OTHER SALABLES

*REFER TO TEXT FOR EXPLANATION

SALABLE MINERAL POTENTIAL

CLOVER MTNS. NV-050-0139



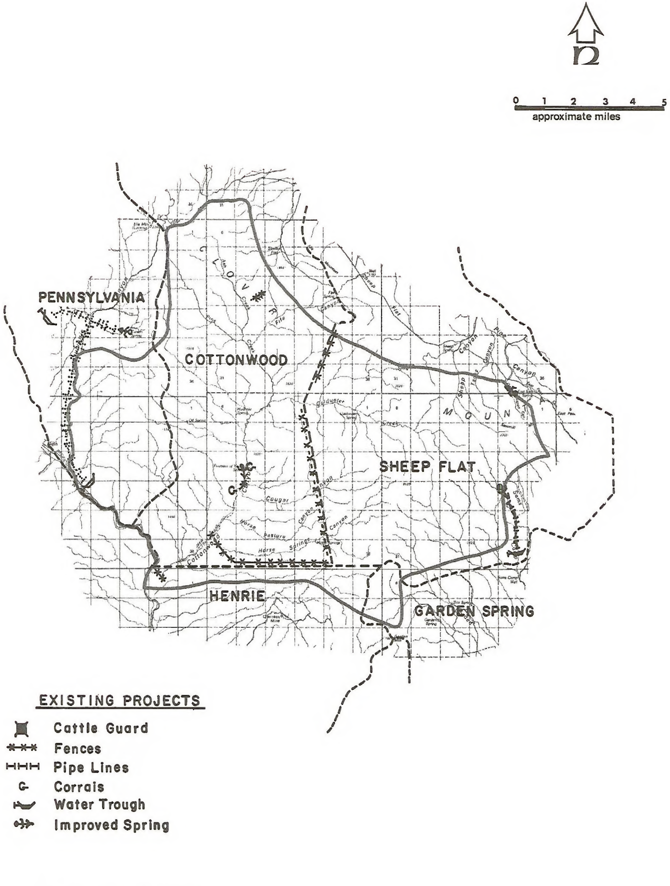
RELATIVE POTENTIAL	MINERAL TYPE *
▩	FREE USE PERMIT—SAND AND GRAVEL
▧ 4	A. OIL AND GAS B. ALUNITE
5	OTHER LEASABLE GEOTHERMAL (in all areas)

OIL AND GAS
(ALL LEASED POST-FLPMA)

LEASABLE MINERAL POTENTIAL
OIL AND GAS LEASES

CLOVER MTNS. NV-050-0139

*REFER TO TEXT FOR EXPLANATION



EXISTING PROJECTS

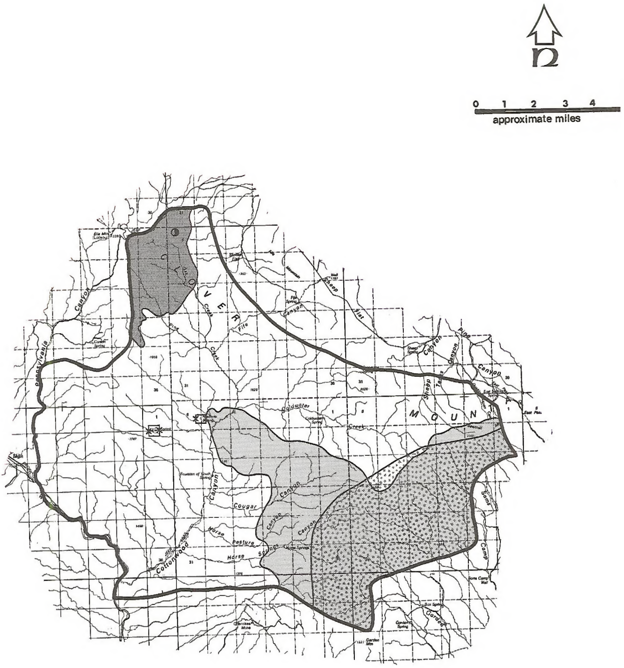
▣	Cattle Guard
--*	Fences
⊢⊢⊢	Pipe Lines
G	Corrals
⊢◡	Water Trough
⊕≫	Improved Spring

PROPOSED PROJECTS

--	Fences
⊢◡	Trough
⁞⋯⁞ ⁞⋯⁞	Pipe Lines

RANGE IMPROVEMENTS

CLOVER MTNS. NV-050-0139



HABITAT

▓ DEER SUMMER

░ DEER WINTER

IMPROVEMENTS

PROPOSED

—×— FENCE

◑ GUZZLER

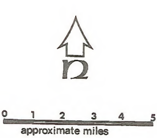
⁘ VEGETATION MANIPULATION

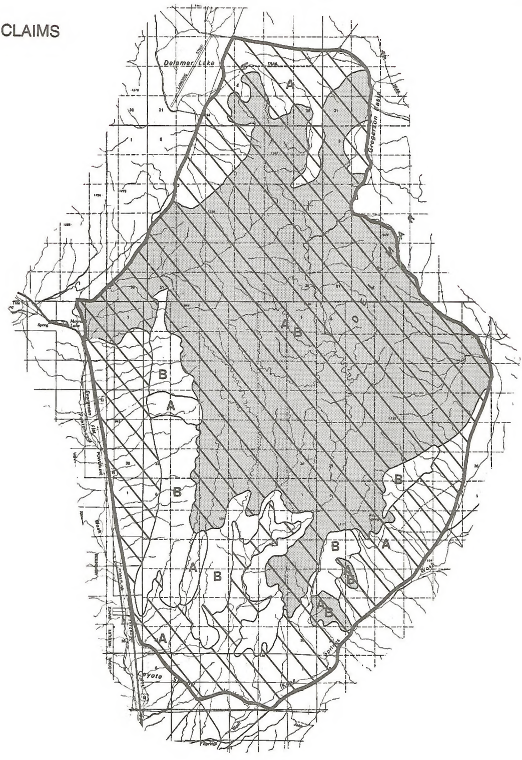
WILDLIFE HABITAT AND IMPROVEMENTS

CLOVER MTNS. NV-050-0139

RELATIVE POTENTIAL	MINERAL TYPE *
☐ 3	A. SILICA B. LIME
▨ 4 ▒	A. URANIUM B. PERLITE
5	OTHER LOCATABLES (in all areas)

none MINING CLAIMS





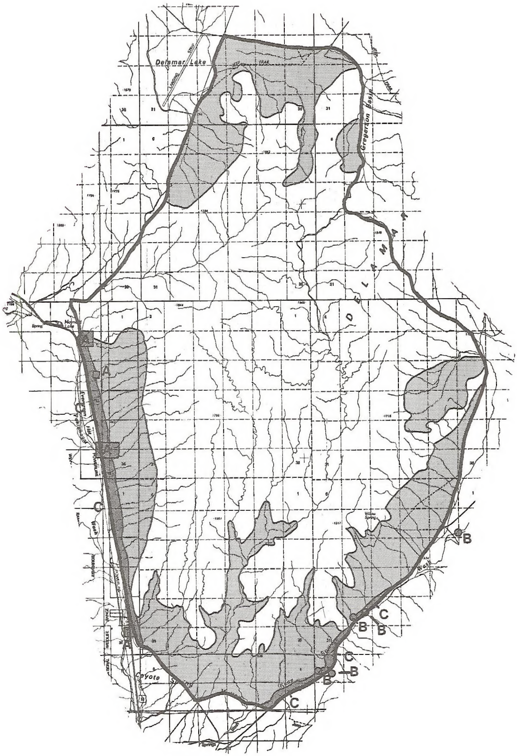
LOCATABLE MINERAL POTENTIAL and MINING CLAIMS

DELAMAR MTNS. NV-050-0177

EFER TO TEXT FOR EXPLANATION

RELATIVE POTENTIAL	MINERAL TYPE*
▨ 1	A. SAND AND GRAVEL MATERIAL SITE RIGHT-OF-WAY B. SAND AND GRAVEL (FREE USE SITE APPLICATION) C. SAND AND GRAVEL
▨ 2	SAND AND GRAVEL
☐ 3	OTHER SALABLES

0 1 2 3 4
approximate miles



SALABLE MINERAL POTENTIAL

DELAMAR MTNS. NV-050-0177

*REFER TO TEXT FOR EXPLANATION

RELATIVE POTENTIAL

▨ 4

5

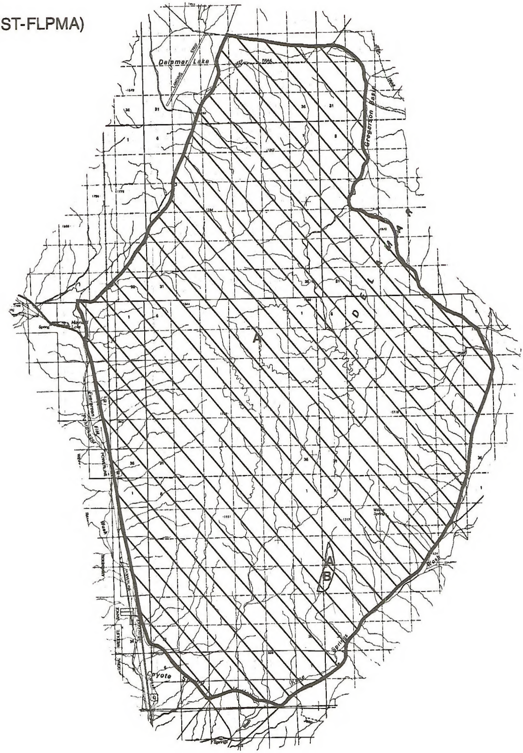
MINERAL TYPE *

A. OIL AND GAS
B. PHOSPHATE

GEOTHERMAL (in all areas)

0 1 2 3 4 5
approximate miles

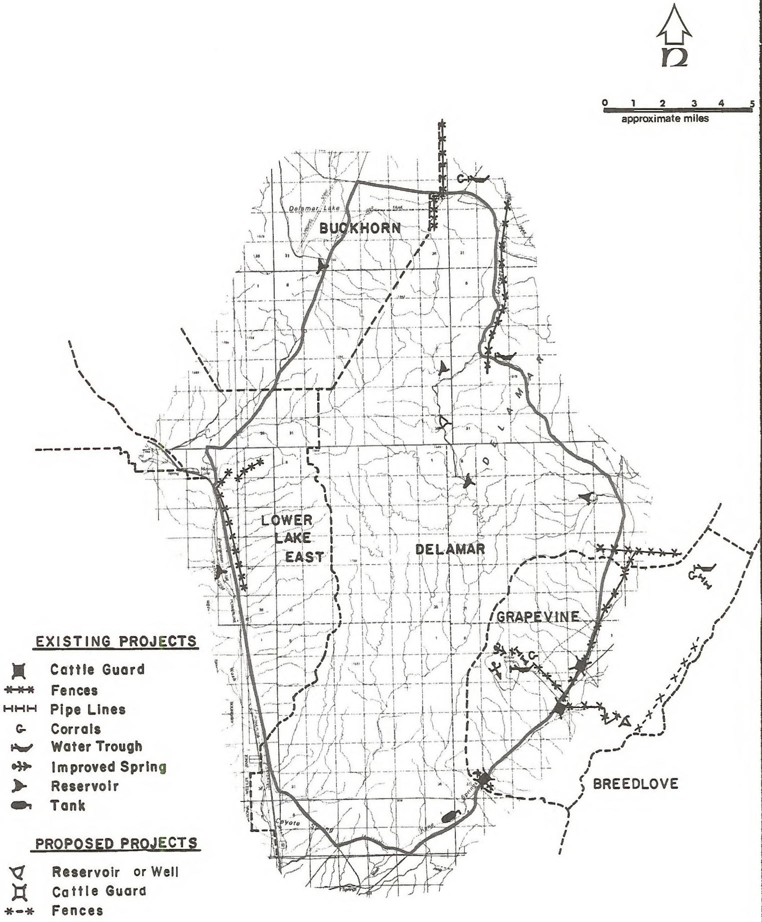
OIL AND GAS
(ALL LEASED POST-FLPMA)



LEASABLE MINERAL POTENTIAL
OIL AND GAS LEASES

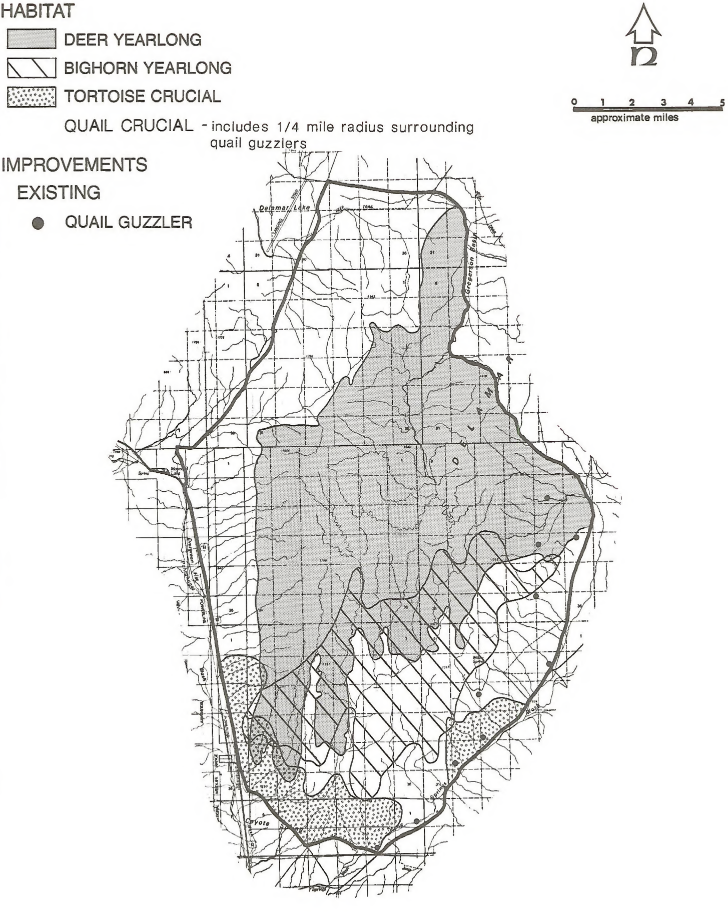
DELAMAR MTNS. NV-050-0177

*REFER TO TEXT FOR EXPLANATION



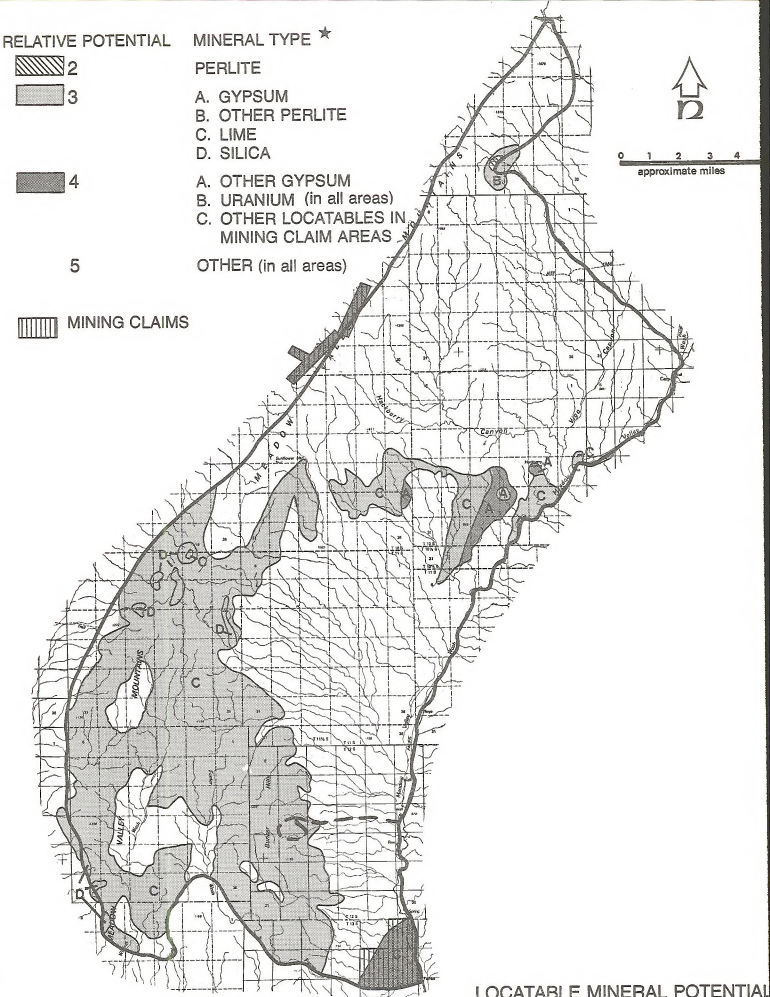
RANGE IMPROVEMENTS

DELAMAR MTNS. NV-050-0177



WILDLIFE HABITAT AND IMPROVEMENTS

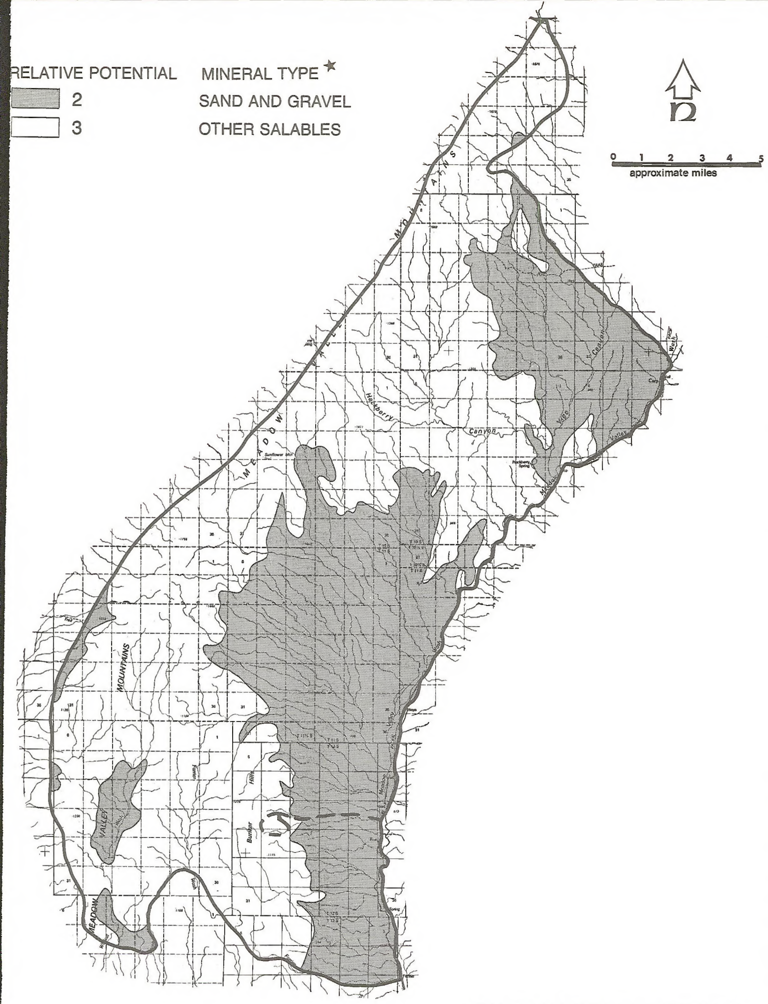
DELAMAR MTNS. NV-050-0177



LOCATABLE MINERAL POTENTIAL and MINING CLAIMS

MEADOW VALLEY RANGE NV-050-0156

*REFER TO TEXT FOR EXPLANATION



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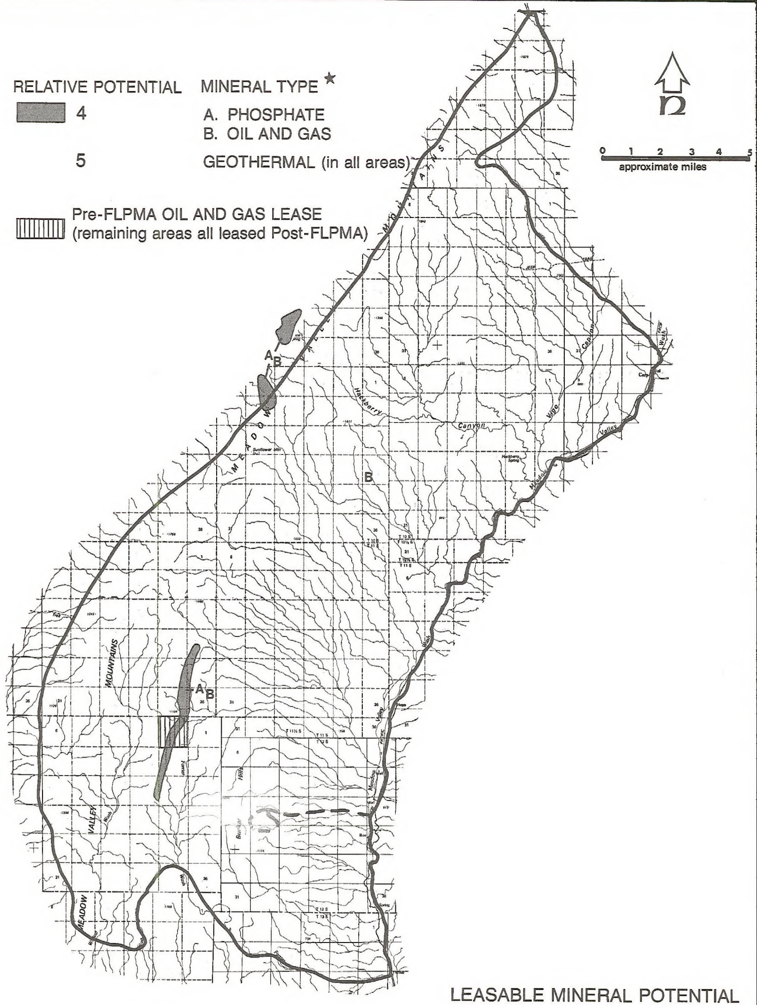
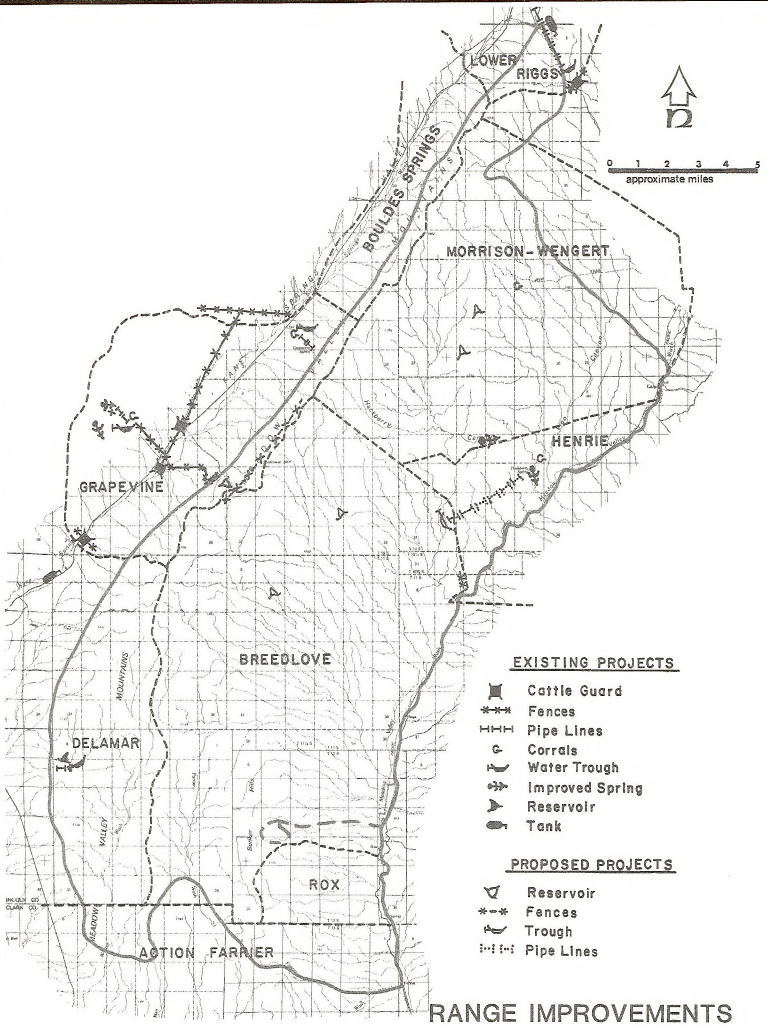
SALABLE MINERAL POTENTIAL
MEADOW VALLEY RANGE NV-050-0156



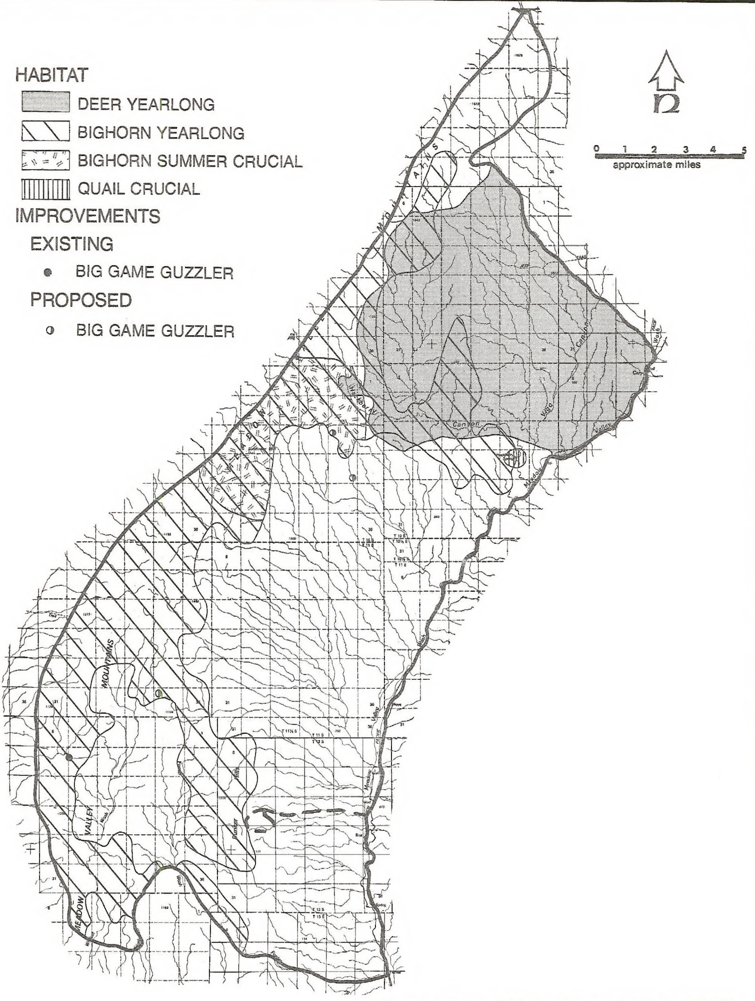
LEASABLE MINERAL POTENTIAL
OIL AND GAS LEASES
MEADOW VALLEY RANGE NV-050-0156

*REFER TO TEXT FOR EXPLANATION



RANGE IMPROVEMENTS

MEADOW VALLEY RANGE NV-050-0156



WILDLIFE HABITAT AND IMPROVEMENTS

MEADOW VALLEY RANGE NV-050-0156

RELATIVE POTENTIAL MINERAL TYPE *

▲ 2 WHITMORE PROSPECT

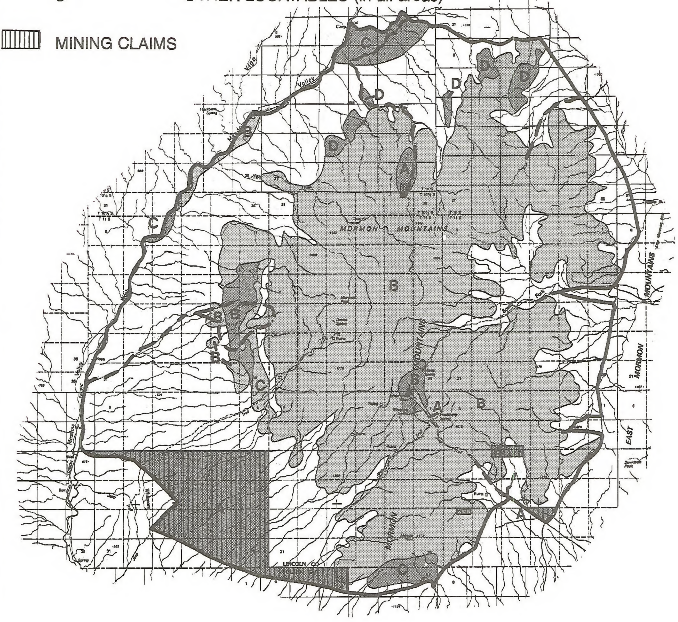
░ 3
A. SILICA
B. LIME

▒ 4
A. OTHER LOCATABLES ASSOCIATED WITH MINING CLAIMS
B. OTHER LOCATABLES WITHIN IGNEOUS—METAMORPHIC TERRANE
C. GYPSUM
D. URANIUM (in all areas)

5 OTHER LOCATABLES (in all areas)

▥ MINING CLAIMS

0 1 2 3 4 5
approximate miles

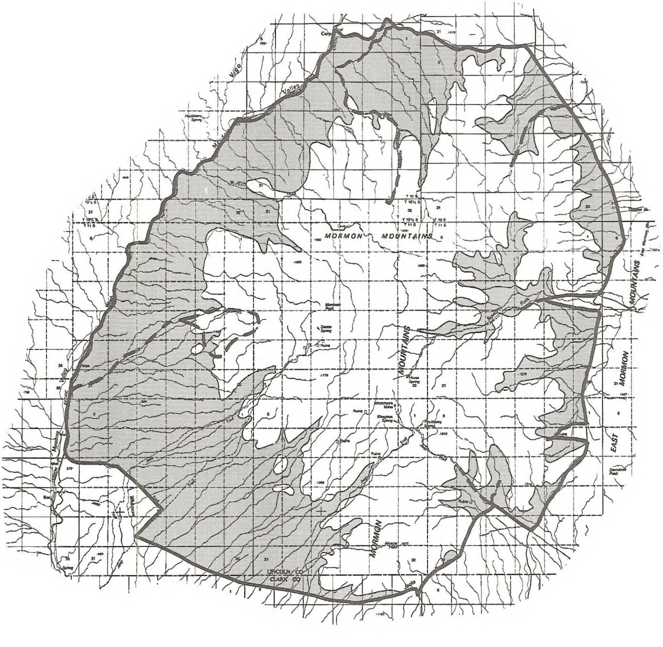


LOCATABLE MINERAL POTENTIAL
and MINING CLAIMS
MORMON MTNS. NV-050-0161

*REFER TO TEXT FOR EXPLANATION

RELATIVE POTENTIAL	MINERAL TYPE*
▨ 2	SAND AND GRAVEL
☐ 3	OTHER SALABLES

0 1 2 3 4 5
approximate miles

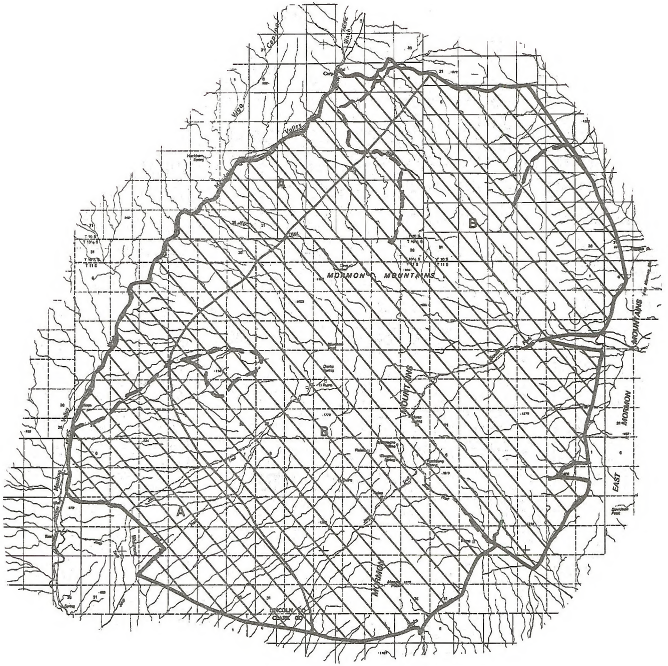


*REFER TO TEXT FOR EXPLANATION

SALABLE MINERAL POTENTIAL
MORMON MTNS. NV-050-0161

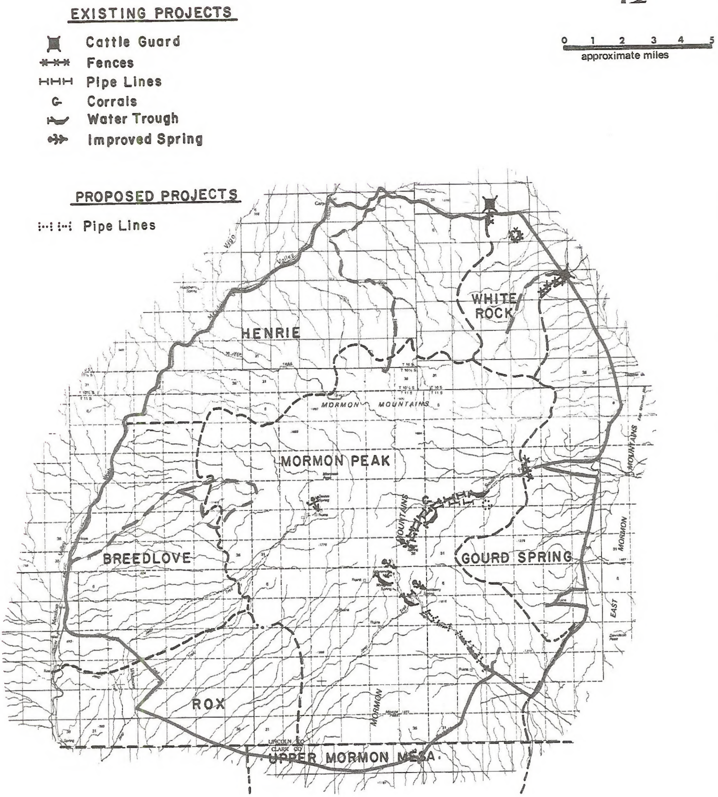
RELATIVE POTENTIAL	MINERAL TYPE *
▨ 4	A. OIL AND GAS WESTERN B. OIL AND GAS EASTERN (all leased Post-FLPMA)
5	GEOTHERMAL (in all areas)

0 1 2 3 4 5
approximate miles



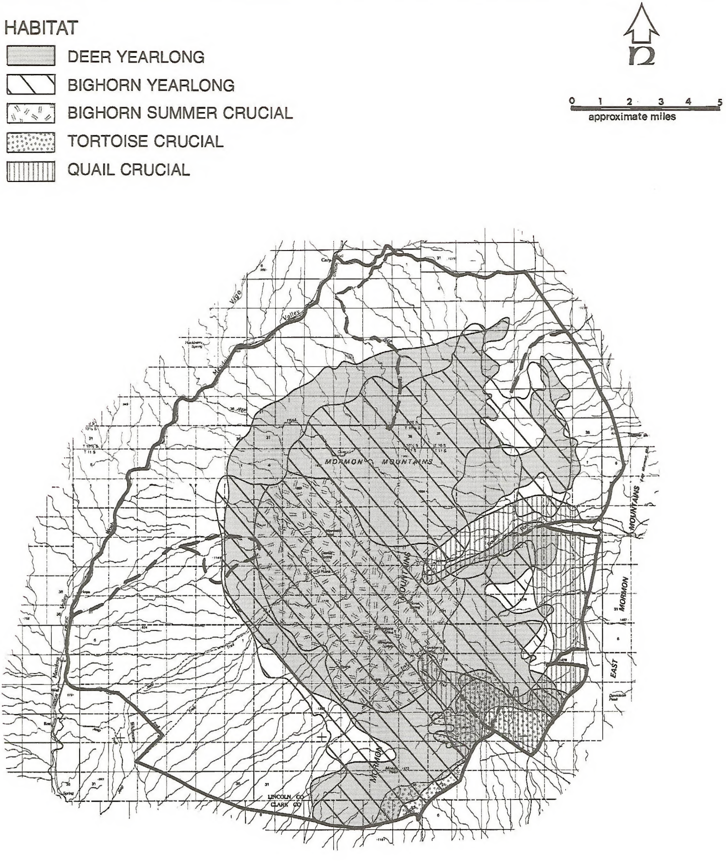
LEASABLE MINERAL POTENTIAL
OIL AND GAS LEASES
MORMON MTNS. NV-050-0161

EFER TO TEXT FOR EXPLANATION



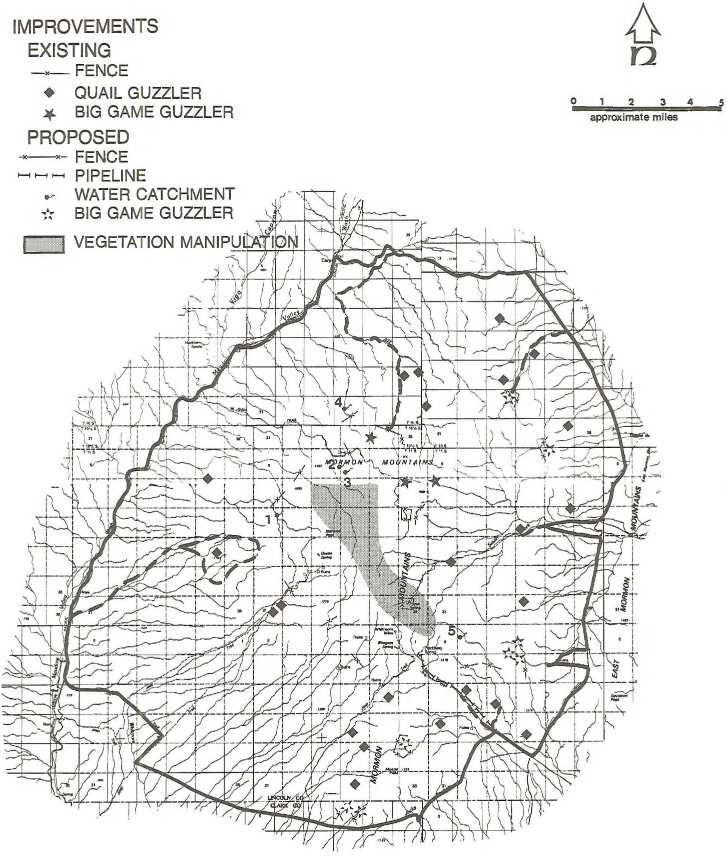
RANGE IMPROVEMENTS

MORMON MTNS. NV-050-0161



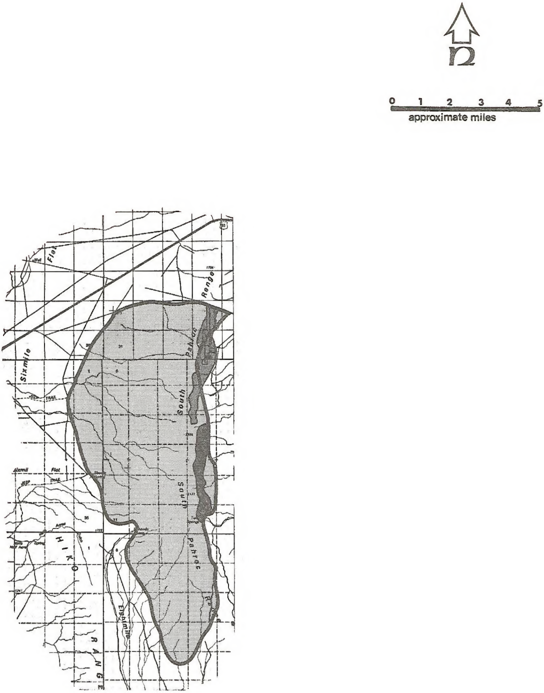
WILDLIFE HABITAT

MORMON MTNS. NV-050-0161



WILDLIFE IMPROVEMENTS

MORMON MTNS. NV-050-0161



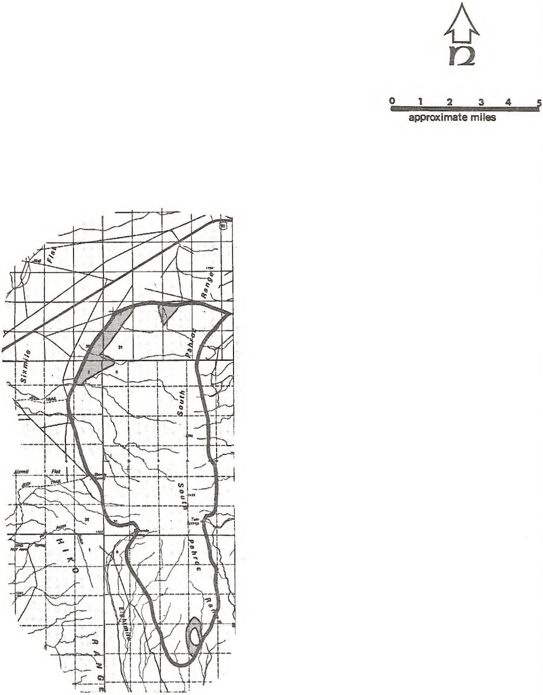
RELATIVE POTENTIAL	MINERAL TYPE *
▲ 1	PERLITE (PARAMOUNT PERLITE MINE)
▨ 2	PERLITE
■ 3	PERLITE
□ 4	URANIUM (ALSO IN 2, 3)
5	OTHER LOCATABLES (ALSO IN 2, 3, 4)

▥ MINING CLAIMS

*REFER TO TEXT FOR EXPLANATION

LOCATABLE MINERAL POTENTIAL and MINING CLAIMS

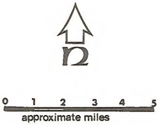
SOUTH PAHROC RANGE NV-050-0132

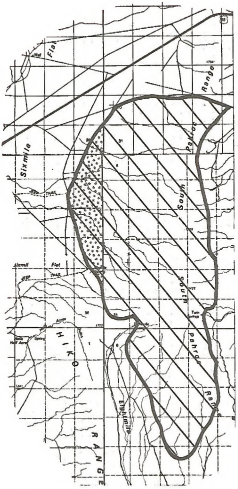


RELATIVE POTENTIAL		MINERAL TYPE
▨	2	SAND AND GRAVEL
☐	3	OTHER SALABLES

*REFER TO TEXT FOR EXPLANATION

SALABLE MINERAL POTENTIAL
SOUTH PAHROC RANGE NV-050-0132





RELATIVE POTENTIAL	MINERAL TYPE *
▧ 4	OIL AND GAS
5	GEOTHERMAL (in all areas)

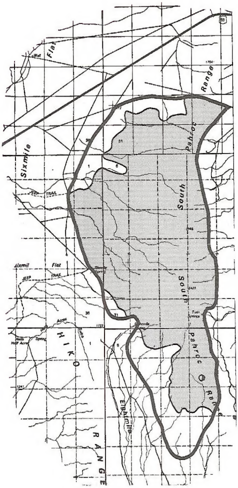
OIL AND GAS LEASE

░ OIL AND GAS

*REFER TO TEXT FOR EXPLANATION

LEASABLE MINERAL POTENTIAL
OIL AND GAS LEASES
SOUTH PAHROC RANGE NV-050-0132

0 1 2 3 4 5
approximate miles



HABITAT

▨ DEER WINTER

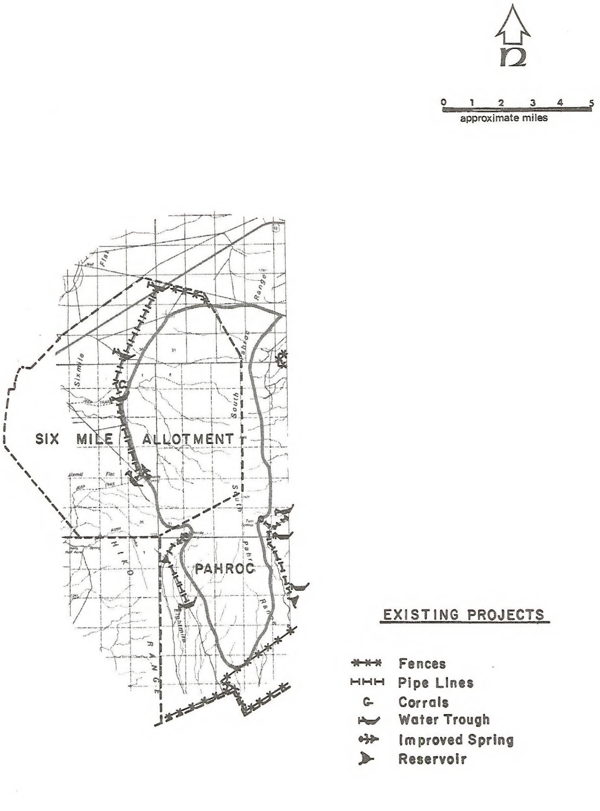
IMPROVEMENTS

PROPOSED

◑ GUZZLER

WILDLIFE HABITAT AND IMPROVEMENTS

SOUTH PAHROC RANGE NV-050-0132



RANGE IMPROVEMENTS

SOUTH PAHROC NV-050-0132

CHAPTER 4

ENVIRONMENTAL CONSEQUENCES

CHAPTER FOUR

ENVIRONMENTAL CONSEQUENCES

IMPACT ANALYSIS

This chapter describes the anticipated impacts and environmental consequences of the alternatives including the Preferred Alternative (Proposed Action). The analysis of impacts is guided by the BLM's "Wilderness Study Policy" (WSP) (Federal Register February 3, 1982) and Wilderness Management Policy (WMP) (USDI, BLM, 1981). The WSP details the criteria to be considered in impact analysis, and the WMP describes which activities will and which will not be allowed in designated BLM wilderness areas.

In nearly every case, the impacts are potential impacts which the resource specialists believe are likely to occur. Further, the identified resources are, in several instances, potential resources, as in the case of minerals. In each case the information is the best available. Effort has been made to keep discussion of potential impacts and potential resources as realistic as possible.

The duration of impacts associated with designation or nondesignation is long term since in either case, the action will be for the long term.

When the following subheadings--"Mitigating measures", "Short term use versus long term productivity", and "Irreversible and irretrievable commitments of resources" -- do not appear, impacts are considered to be insignificant and therefore, no discussion is necessary. All adverse impacts are considered to be "Unavoidable adverse impacts" which cannot be mitigated. In some cases, minor effects or impacts are discussed when they are of value to the decision-makers or of interest to the reader; in general, though minor impacts do not appear in the discussion.

All impacts described are direct unless otherwise stated. Designation of wilderness is intended as a long-term commitment of resources. Though technically reversible by Congress, this is highly unlikely and the impacts are irreversible in a practical sense. Similarly, while the impacts of nondesignation are reversible with major efforts, funding and protracted time frames, the likelihood of this is slight.

Appendix B is a development scenario based on BLM plans or from proposals known to resource specialists in various discussions with individuals and groups. It is intended as a basis for delineating likely impacts on nondesignated WSAs or portions thereof. It is not offered as a statement of what will happen, but simply as a possible development scheme for the purpose of impact analysis in this EIS. It is not a worst case scenario, but a reasoned estimate of likely development directions.

ASSUMPTIONS

1. All baseline data are the best available.

2. Management actions on units not designated wilderness will be consistent with the present Management Framework Plan.

3. The Bureau will have the resources to develop and implement wilderness management plans for areas designated wilderness.

4. The short term is the five year period following a Congressional decision on a WSA. The long term is the period after those five years.

5. Construction costs for projects identified in intensive management plans, designed to meet wilderness criteria, may or may not exceed the benefit-cost ratio making them impractical or maintenance costs excessive. Additionally, restrictions on the use of motorized equipment, may or may not eliminate some projects altogether.

6. Current trends in population and demand for resources will continue at the same rate of increase (or decrease) in the future, unless specifically stated otherwise.

STANDARD OPERATING PROCEDURES

All actions on BLM lands are subject to various standard operating procedures (SOPs) which are designed to mitigate impacts and which apply, as appropriate to each alternative or combination thereof. Key SOPs are identified as follows.

1. The BLM's Wilderness Management Policy (Appendix C) will apply to public lands administered by BLM that have been specifically designated as wilderness by an Act of Congress. Wilderness Management Plans which include activity plans for all affected resources will be developed.

2. Lands under wilderness review will be managed under the Interim Management Policy (Appendix D) until Congress acts.

3. If Congress releases a wilderness study area, the Interim Management Policy will cease to apply and the area is managed in accord with the existing MFP for the area.

4. WSAs preliminarily recommended as suitable will receive a mineral resources survey conducted by the U.S. Geological Survey and U. S. Bureau of Mines. The Secretary of the Interior will consider the results of these surveys in making the final wilderness suitability recommendations to Congress.

5. Cultural resources will continue to be protected in accordance with Section 106 of the National Historic Preservation Act of 1966, Section 2(b) of Executive Order 11593 and Section 101(b)(4) of the National Environmental Policy Act (NEPA) of 1969, the Antiquities Act of 1906, the American Indian Religious Freedom Act of 1978, as amended, the Federal Land Policy and Management Act of 1979 and the Archeological Resources Protection Act of 1979.

6. Protection and management of wild horses and burros will continue to be guided by the Wild Horse and Burro Act of 1971.

7. Cherrystemmed roads inside designated wilderness areas will be open but ways will be closed to vehicular use except for grandfathered range uses. Use by permittees will be governed by the Wilderness Management Policy and will be specifically authorized in Wilderness Management Plans. Authorization to use motorized equipment will be given only where practical alternatives do not exist.

8. The grazing of livestock will continue as before in the areas designated as wilderness. Grazing is a grandfathered use established in all the WSAs prior to the enactment of the Federal Land Policy and Management Act of 1976. No adjustments in wilderness area livestock numbers

will occur simply because the area is designated as wilderness. Any adjustments will be triggered by range condition and protection of the range resource, the same factors which trigger such decisions in non-wilderness lands.

9. Livestock facilities present at the time of designation, may be maintained including occasional use of motorized equipment where practical alternatives to such use do not exist. Use of motorized equipment will normally be permitted only in those portions of the wilderness where they had occurred in the past or are established by prior agreement. Construction of new improvements may occur for the primary purpose of resource protection and more effective management of these resource, but not to increase livestock numbers.

10. Motorized equipment may be used for emergency purposes such as rescuing sick animals or for emergency feeding.

11. BLM and BLM permitted activities are reviewed through the NEPA process. Significant impacts are mitigated using one or more of the 203 stipulations in the publication "Special Stipulations to Streamline Environmental Assessments, Contracts and other Project Work Documentation" (USDI, BLM, Las Vegas District, 1981), as appropriate. That publication is included here as committed mitigation. For mineral related activities within designated wilderness areas, 43 CFR 3809 regulations apply.

12. Habitat manipulation for wildlife benefits by chemical or mechanical means may only be approved on a project-by-project basis where necessary for threatened or endangered species, or to convert unnatural conditions resulting from human influence. Vegetation manipulation projects may be approved if they do not degrade wilderness character, or if they convert conditions which are a result of human influence or if they benefit T&E species. Wildfire or prescribed burning may be used if carefully designed to maintain or enhance the wilderness resource. It may not be used solely to improve wildlife utilization, but may be used to reestablish natural ecological processes.

13. Installation of guzzlers and spring enclosures may occur in a manner consistent with preservation of wilderness character and wilderness management objectives.

14. The State and BLM have a Memorandum of Understanding (BLM and Nevada Division of Environmental Protection, 1980) agreeing that BLM resource management plans will incorporate "best management practices" to eliminate or reduce water pollution from diffuse sources resulting from the use, maintenance, or improvement of soil, water and plant resources.

DETERMINATION OF SIGNIFICANT IMPACTS

To assist in determining if impacts are significant, thresholds are established for each resource. When an environmental impact exceeds a threshold, it is deemed significant. Thresholds are determined by the resource specialist, who uses professional judgement, and may also be influenced by law, regulation, and public opinion. Thresholds were not developed for those resources determined in advance to be unaffected by the proposal and alternatives. These are generally mitigated by the SOPs. In every case the existing condition is the baseline against which impacts are measured. For example, when analyzing impacts to wildlife, the existing conditions (baseline) may include such things as poor habitat condition or effects resulting from mineral entry in crucial habitat. Designation of wilderness closes an area to new mineral entry (except for continuing activity on valid existing rights) and generally would be considered a beneficial impact since surface disturbing activities would be disallowed. On the other hand, nondesignation would have no impact, since surface disturbing activities associated with mineral entry are presently allowed. In other words, nondesignation did not open the area to these activities and does not change management practices that were in place prior to the wilderness study process. The following thresholds have been developed for use in the EIS:

Wilderness: Designation of an area as wilderness is considered to be a significant beneficial impact if it would preserve mandatory wilderness characteristics (size, naturalness, opportunities for primitive recreation or outstanding opportunities for solitude) that would be lost without designation. A significant adverse impact occurs when an area will lose any one of these mandatory characteristics such that it would no longer qualify as a WSA.

Recreation: The thresholds are exceeded if; a) Wilderness designation changes historical recreation use patterns. b) Outstanding opportunities for primitive recreation are lost.

Energy and Minerals: The threshold for energy and mineral impacts would is the removal from mineral entry or leasing any potential mineral or energy resource classified in commodity group 1 with a mineral potential rating of 1 or 2 or classified in commodity group 2 with a mineral potential rating of 1 (See Figure 4-1). An explanation of this classification system is found in the Appendix A and WSA specific mineral and energy resource classifications are found in individual WSA descriptions in Chapter 3.

Wildlife: The threshold would be a 10 percent increase or decrease in existing or potential wildlife habitat or any protection or loss of critical habitat of a sensitive or threatened or endangered species.

Livestock Grazing: A loss of management opportunities to meet the stated objectives of activity plans is a significant impact. These activity plans have gone through the BLM's planning system and Coordinated Resource Management Planning with various public inputs and management approval. Any consequent change resulting in a 10 percent change from the existing levels listed in the Caliente Grazing EIS is considered significant.

Economics: The thresholds are a 5 percent change in income or a 5 percent change in the employment or sales of any economic sector.

Social Condition: The threshold is the in or out-migration of people which exceeds 10 percent of the local area's current population and which results from wilderness designation.

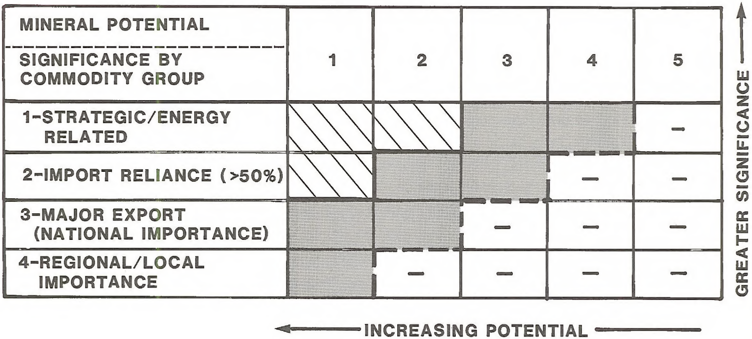
Cultural Resources: The threshold is the unsalvaged loss of scientifically or educationally valuable sites.

Lands: The threshold is exceeded when wilderness designation precludes establishment of a major utility or transportation corridor and/or limits communication site placement to technically or economically unfeasible locations.

GENERAL IMPACTS

The following impacts occur in any of these areas if designated as

Figure 4-1 Threshold Level of Significant Impact



MINERAL POTENTIAL SIGNIFICANCE BY COMMODITY GROUP	1	2	3	4	5
1-STRATEGIC/ENERGY RELATED	▨	▨	░	░	—
2-IMPORT RELIANCE (>50%)	▨	░	░	—	—
3-MAJOR EXPORT (NATIONAL IMPORTANCE)	░	░	—	—	—
4-REGIONAL/LOCAL IMPORTANCE	░	—	—	—	—

GREATER SIGNIFICANCE
INCREASING POTENTIAL

Key

—— THRESHOLD, SIGNIFICANT IMPACT

- - - THRESHOLD, IMPACT

▨ SIGNIFICANT IMPACT

░ SOME IMPACT, NOT SIGNIFICANT

— NO IMPACT

NOTE: Refer to Figures 3-1 and 3-2
for definition and classification

wilderness. To avoid repetition, they are presented in this section.

Wilderness: Acreage designated will benefit the National Wilderness Preservation System by expanding its physiographic and ecoystem diversity, enlarging the source of protected genetic material managed within the system and preserving primitive recreation activity opportunities. All five areas are within one day's drive of the Las Vegas Standard Metropolitan Statistical Area (SMSA), three of the areas are within one day's drive of the Porterville-Visalia, California SMSA, and two of the areas lie within one day's drive of the San Bernardino, California SMSA. Consequently, designation would expand wilderness type recreational opportunities within one day's drive of several large metropolitan areas. Nondesignation will result in a gradual erosion of many of the region's wilderness resources although some would remain untouched indefinitely.

Recreation: With identification of these areas through designation, there may be an increase in use which could depreciate primitive recreational experiences in very localized areas of concentrated use. Preservation of opportunities for primitive recreational experiences benefit this type of use. Although some primitive recreational resources will remain over the long term, others will gradually diminish over time with nondesignation. Designation will preclude ORV opportunities in some areas, but most ORV travel occurs on ways and roads, thus impact is minimal. No empirical data exists regarding recreation use, but judgement indicates that less than 10 percent overall increase in primitive recreation usage will occur with designation. This is supported by recent Forest Service data.

Energy and Minerals: Mining claim location will not occur in designated wilderness areas. Operations may continue on claims staked and upon which a valid discovery has been made prior to designation. Activities are controlled by 43 CFR 3809 requirements, which restrict actions to "no unnecessary or undue degradation of wilderness character", and which require reclamation. Claims upon which valid discoveries were made prior to the date of wilderness area designation, constitute valid existing rights. Patents on the claims may only be issued for subsurface mineral rights." Therefore, some interference with mineral operations may occur.

Reclamation measures on mines are required by regulation. Any additional costs to reclaim an area to higher standards because it is in a wilderness area are considered to be insignificant in almost all cases. The exception would be where a mine was extremely marginal and the slight additional costs of wilderness reclamation may tilt it into the unprofitable column.

All current oil and gas leases are post FLPMA and activities may be permitted on them subject to non-impairment of wilderness values. No leasing will occur after an area is designated. Permits for removal of common varieties of minerals will not be issued.

Wildlife: Most wildlife species benefit from lack of man's disturbance of their habitat or of the animals themselves. Although, in the case of bighorn sheep, because of the past and present conflicts resulting from competition between wildlife and man's uses, restoration may require more than mere protection. The accomplishment of project work required to resolve these problems could be adversely impacted by wilderness designation. The cost involved with installing these projects in a manner compatible with wilderness may outweigh the benefits, and therefore be prohibitive. The result being that these funds would be expended on projects in non-wilderness areas. Wilderness designation will benefit most species, particularly the more reclusive species.

Habitat manipulation projects may be more difficult and costly to accomplish due to the careful planning and implementation requirements necessary to preserve wilderness character. However, a return to a more natural fire management regimen will likely accomplish more to increase habitat productivity than will available limited funding for projects.

Grazing: Maintenance of existing range facilities will be permitted in designated wilderness but will require advance planning. This may cause additional expenditures of money and time, but those are limited to that which is reasonable. In addition, intensively managed allotments (those having or identified as needing intensive management systems) may require the building and maintenance of rangeland structures. These actions may require motorized equipment for construction and maintenance purposes and would have to meet WMP criteria for such use.

Construction and maintenance costs of new developments may be higher in wilderness areas than outside because of the increased costs and restrictions of using the least impairing construction methods and most environmentally compatible materials.

In conclusion, present grazing levels will not be reduced as a direct result of designation of an area as wilderness. However, in some cases range project development may be compromised because existing and proposed management proposals for an allotment may directly conflict with wilderness management objectives of the area if designated.

Soil, Water and Air: Adverse effects attendant in non-Bureau controlled activities such as mining under the 1877 Mining Law may occur in non-designated areas. Though limited to "a manner that will prevent unnecessary or undue degradation", such activities could, but not necessarily will, create locally significant adverse impacts to soil, water and air resources. In summary, wilderness designation would neither prevent otherwise unmitigated impacts from occurring, nor preclude actions necessary for resource protection. Designation or non-designation of wilderness would have no significant impacts to these resources.

Economics: Economic interest in the WSAs derives from their use for grazing, recreation, mineral production, and taxable assets. Analysis indicates no significant alteration of the area economy may be expected to occur due to formal wilderness designations. Some trade-offs may occur with particular industries such as recreation being enhanced, and mineral extraction being discouraged, but the basic structure of the local economy will remain intact. Exclusive of intangible wilderness preservation values, impacts at the state and national levels due to changes in the state and county share of mineral leasing revenues, will be unnoticed. However, in a county of less than 4,000 people, even minor losses of tax revenue would be locally noticeable.

Wilderness designation would not have any significant impact on range use because of the lack of restrictive grazing stipulations following designation. Extremely limited demand exists for forest products within the WSAs as these products are available in sufficient quantities in proximate areas to cover present and foreseeable demand.

There is no conclusive evidence that significant increases in recreation use will occur, or that the average annual rate of increase in recreation use will be accelerated due to designation. However, initial, temporary changes may be expected due to publicity and increased public awareness. Such changes as may occur do not hold the promise of either important economic benefits or disruptive impacts. The retail trade and services industries, particularly hotels and lodging places, eating and drinking places, and recreation services/would benefit moderately from any increased recreation use. Any additional demand, however, is expected to be insufficient to encourage the entry of new businesses, but would most likely be manifested in increased sales.

Presently, there is no mineral production within the WSAs. Existing data on potential are unamenable to analysis for economic significance.

Wilderness designation would have no significant effect on the tax structure itself, or the amount of revenues received. The BLM's Payments in Lieu of Taxes for Lincoln County in Fiscal year 1982 amounted to $171,485. Unless there is a change in this program, these funds will continue.

The State of Nevada receives 50 percent of all mineral leasing revenues, a percentage of grazing revenues, and 4 percent of all revenues from sale of lands and materials. Grazing revenues should remain the same except for changes due to changes in the grazing fees made on a national basis. Revenues from sale of lands and material will be unchanged. Losses in mineral leasing revenues and potential grazing revenues will, to some degree be made up by increased sales taxes from recreational visitors.

Income and Employment

Within the WSAs income and employment are generated from livestock grazing and mineral exploration, and unquantifiably from recreation. Income and employment in the livestock industry will likely remain within its present levels and trends.

While there is no current mineral production within the WSAs, and therefore no income, there is some unidentified explorative employment occurring. This would be foregone along with any potential employment associated with mineral development except for valid claims becoming productive.

Income and employment in the recreation-related trades and services sectors are expected to be moderately enhanced. The degree of enhancement depends entirely on the tastes of the recreation public and the level of desirability and challenge which is attached to particular wilderness areas.

Commodity Production and Services

Wilderness: Any wilderness designation in the Caliente Resource Area benefits the National Wilderness Preservation System by expanding its ecosystem diversity. In addition, any designation provides long term protection of opportunities for primitive and unconfined recreation within a day's drive of the Las Vegas Standard Metropolitan Statistical Area.

Recreation: Most of the WSAs or portions thereof are currently inaccessible to vehicles. The restriction of vehicle use in the accessible portion of the WSAs will tend to reduce the number of recreation visitor days associated with hunting, off-road vehicle use, and other vehicle supported recreation such as trapping, hunting, rockhounding, and vehicle camping.

However, excluded vehicle dependent recreation activities will simply be displaced to abundant opportunities available on adjacent public lands. Thus, it is expected that there will be no net impact on the area economy due to restriction of vehicle access.

At the same time, documentation exists indicating that wilderness areas tend to attract recreation use by virtue of the publicity associated with formal wilderness designation. Professional judgement indicates that primitive and unconfined recreation activities such as nature study, day hiking, camping, backpacking, horse packing, mountain climbing, rock climbing, and caving will increase at a minimal rate of 2 percent per year. This increased visitation should result in a comparable increase in recreation expenditures and recreation-related local income and employment.

An additional benefit will be realized in the increase in intangible values enjoyed by recreationists, which may be considered to accrue to the National Economic Development account. This account measures the national value of goods and services and includes the "willingness-to-pay" value of recreation. None of these effects are sufficient to be considered significant.

Energy and Minerals: The major problem underlying economic evaluation of minerals is the great uncertainty regarding the existence of minerals in sufficient quantity and quality to be commercially feasible. In addition, long range mineral resource evaluation and market demand estimates are at best speculative. Both mineral resource evaluation and development are directly dependent upon market demands that may be regional, national, or worldwide in scope. Present international and national economic conditions are such that even areas with known mineral potential in the Planning Unit are uneconomic, let alone low potential areas within WSAs.

Wilderness designation prohibits mineral entry after designation except for valid existing rights, extant at the time of designation. Development of all valid mineral rights is subject to reasonable regulations regarding access, prohibiting unnecessary and undue degradation, and requiring reclamation in order to diminish the impact on wilderness and other resource values. This may result in additional costs to potential operators and, therefore, discourage development in a few cases. However, based on what is presently known about mineral deposits in the WSAs, wilderness designation would not create any significant impact.

Four of the five WSAs have been leased for oil and gas. One deep test well was drilled during the 1970's in the Meadow Valley Range WSA with unknown results. No production has yet occurred anywhere in the Resource Area. Potential reserves cannot be estimated. Some oil and gas leases may expire as a result of wilderness designation if there is no resource development within the 10-year life of the lease. In the absence of discovery of promising hydrocarbon resources in the region, most, if not all, leases will lapse regardless of land status.

The BLM receives average annual oil and gas lease revenues of $1.50 per acre from a total of 559,602 acres in these WSAs. Future receipts are estimated at $839,403 annually, of which 50 percent, or $419,701, would go to the state until these leases expire. The state distributes its share of lease revenues back to the counties, on a pro-rata basis, through the Distributive School Fund. In addition, the counties levy a tax on oil and gas leases equal to the leasing fee paid to BLM. These funds will be lost when the leases expire, which could have an adverse effect on operating revenues for Lincoln County if not replaced. The Combined Local

Government Budget for Lincoln County in fiscal year 1982 was $7,973,826. Revenues from oil and gas leasing represent approximately 16 percent of the total budget, or $1,259,000.

Grazing: Livestock production within the WSAs consists of cattle grazing, with grazing quality varying from excellent to poor. These WSAs contain approximately 10 percent of the authorized AUMs in the Resource Area. The value of livestock production within the WSAs is insignificant on a regional or national level. However, in the context of the limited local economy, values may be locally significant.

Wilderness designation will not result in the reduction of present AUM preference, however, there may be some loss of potential forage availability due to precluding maximum range development. Restrictions may also be imposed on the number and type of range developments that may be implemented under present and planned AMPs and may result in moderate additional costs. However, if the required benefit/cost analysis shows these improvements are uneconomic as originally proposed without wilderness restrictions, they may not have been constructed anyway and thus to not involve economic losses.

There may be slight additional costs to some ranch operations due to limitations on motor vehicle access for range improvement maintenance, water hauling, salting, and surveillance. These costs do not appear to be significant and are required by BLM's Wilderness Management Policy to be reasonable. An unpublished research report (BLM, Oregon Staff Office, 1982) estimated the average increase in costs to be on the order of $1.32 per vehicle mile for one horse and rider plus $0.39 for each packhorse or $0.07 per AUM. This could result in accelerating the demise of marginal or sub-marginal operations.

Social Assessment - None of the alternatives are anticipated to significantly affect the social structure of the county, state, region, or nation.

Wilderness designation would not introduce new people into the area permanently in any significant numbers nor would designation cause residents to leave in any significant numbers.

Additional constraints will be placed on the use of motor vehicles in designated areas. Local residents placing high value on motorized recreation, as well as many Las Vegas residents, would view designation as an adverse impact to their freedom and to their available recreational opportunities (e.g., hunting, trapping, ORV use).

For those individuals who view the BLM negatively, the designation of wilderness would reinforce that perception. They would view the implementation of this wilderness designation as another case of a major decision about local public land resources being made by uninformed Federal bureaucrats at the national seat of government.

The contrary view would be held by those local and regional people valuing wilderness and primitive recreational pursuits. Non-designation would be viewed as a significantly adverse impact by most of them.

Designated lands would be withdrawn from appropriation under the mining laws on the date of designation unless otherwise provided for in the enacting legislation. Individuals in the affected sector would view this as a significant adverse impact.

Cultural Resources: Impacts occurring to cultural resources as a result of wilderness designation will be both beneficial and potentially adverse, and will be offsetting. Adverse impacts will result from some increase in primitive recreational use and associated increase in vandalism and inadvertent damage to cultural resources. Adverse impacts will also occur due to much higher costs of intensive inventory and recordation in a wilderness area. Deterioration of sites will occur in most cases, since management will not normally include site stabilization.

Obeyance of laws protecting cultural resources will be more certain in designated wilderness areas because there will be more monitoring of activities than in nonwilderness. Beneficial impacts will result from a greater knowledge of the resource provided by the greater number of visitors, and from inventories of areas where impacts of wilderness users are expected to be damaging. The prohibition of certain activities will mean that sites that would normally be inventoried and then destroyed or removed will be left intact and in context for future study with new techniques.

Cultural resources generally benefit from wilderness designation due to increased protection from surface-disturbing activities and vandalism. Somewhat offsetting, would be potentially increased costs for archeological investigations, decisions to disallow research or stabilization projects, or possible visitation increases which could increase site vandalism.

Overall, beneficial impacts to cultural resources through wilderness designation would outweigh potentially adverse impacts. Cultural resources could be adversely impacted through development and unrestricted vehicle travel in areas not recommended for designation.

Lands: Since the Wilderness Management Policy allows access to mining claims, the only impacts wilderness designation would have on the lands program would be to restrict expansion of existing corridors, right-of-way and communication sites and to prevent development or designation of new facilities. Material site rights-of-way would also be precluded.

Access into designated wilderness areas would be subject to Wilderness Management Policy guidelines. In addition, none of the WSAs are in conflict with the current land tenure adjustment program. Under the No Wilderness Alternative, all WSAs would return to full multiple-use management and the uses previously discussed would not be in conflict with wilderness designation.

Due to the low population density of the area and availability of possible sites outside the WSAs; development of new communication sites are unlikely within the WSAs. However, the U.S. Air Force utilizes small portable communication sites during military training activities. Although these types of sites are not allowed in wilderness areas for this purpose, the availability of sites outside the WSAs would preclude any significant adverse impacts.

Four of the WSAs are bordered to some extent by transportation or utility corridors. Impacts relative to these corridors or other lands related impacts are discussed under specific WSA and alternative narrative. The lands program in the South Pahroc WSA is not impacted under any alternative.

Excepting the All Wilderness Alternative, no significant impacts will occur to the lands program under any of the remaining alternatives. The All Wilderness Alternative could have a significant adverse impact to existing and proposed utility projects along the west boundary of the Delamar WSA.

IMPACTS BY ALTERNATIVE

233,700 acres suitable
354,723 acres unsuitable

Proposed Action
(Preferred Alternative)

Clover Mountains (Grapevine)

84,165 acres suitable
770 acres unsuitable

Wilderness: This alternative would designate 84,165 acres as wilderness and include nearly all of this WSA's outstanding wilderness resource. A total of 770 acres involved with mining claims would be nonsuitable and lie next to the Pennsylvania Mining District. This configuration would preserve the wilderness integrity of the entire area.

Designation would incorporate lands ranging from an elevation of 7,300' to 3,000' and which encompass several interesting and varied vegetation zones. At the upper end of the Cottonwood drainage are pinyon-juniper woodlands interspersed with ponderosa pine groves with willow, ash, gambel oak and cottonwood farther down. In the lower reaches are desert shrubs, chollas as tall as 8', yuccas and prickly pears

The presence of the rare commodity of live water in the 15 mile reach of Pine and Cottonwood Creeks is a jor enhancement to the visitor. Other ephemeral creeks ranging in length from 4.5 to nearly 7 miles enter this main drainage from the sides. Preserved in the northern portion, would be rugged peaks, leading to deep twisting canyons, brightly-hued cliffs and narrow rock walls in the central portion. With 131 square miles, good topographic and vegetative screening, solitude is readily attained in this alternative. In the southern quarter, topographic screening is reduced to affect approximately 50 percent of the area and low vegetation dominates. This offers less opportunity for solitude but none-the-less provides a substantial amount. On the east, large areas of thick pinyon-juniper enclose patches of quaking aspen as at Quaking Aspen Spring. Quaking Aspen is rare in the resource area.

Excellent day hiking opportunities exist in the vicinity of Quaking Aspen Spring, into the upper reaches of Pine Creek and into the lower end of Cottonwood Creek. Challenging cross-country hikes and camping for one to two week stints are available using the main Pine and Cottonwood drainages or traversing the area in an east-west direction.

Visitation will increase with designation and may depreciate wilderness values in popular camping spots, without some management of the area. This increase is expected to be in the moderate (50-300 visitor days) range.

Some outside sights and sounds could intrude in the localized area adjacent to the Pennsylvania mining district in the northwest portion of the WSA, if development ensued there. In the southwestern portion of the WSA, lands are susceptible to ORV use but no evidence of such use exists now and the Union Pacific railroad presently controls access across its right-of-way. Since Cottonwood Canyon is the major access point, control would be easy to obtain, if ORV use became a problem. On the 770 acres (nonsuitable) adjacent to the Pennsylvania Mining District, it would be difficult to maintain wilderness integrity because of exploration or development work on mining claims blanketing the area.

Designation would protect the area from possible impacts due to vegetation alteration projects, mineral exploration or extraction activities and access road construction. Significant beneficial impacts would occur with designation.

Recreation: Some increase in recreation use is anticipated under this alternative. Designation would preserve outstanding opportunities for primitive recreation which lie within two hours of the Las Vegas SMSA. Visitors will tend to concentrate in areas along the Cottonwood Creek drainage and in the Quaking Aspen Spring area. A concentration of use at these focal points could result some crowding with soil and vegetation drainage at suitable camping spots. Consequent depreciation in enjoyment levels may result. This could be mitigated by the wilderness management plan for the unit.

Energy and Mineral Resources: Locatable Minerals - Three areas comprising 1,440 acres with inferred favorable (Class 3) mineral potential and the 81,109 acre area with unfavorable or unknown (Class 5) mineral potential will be withdrawn from mining claim location. Two areas with unqualified (Class 4) mineral potential will also be withdrawn, a 220 acre area near the Viola (Cherokee) mining district and a 1,400 acre area east of the Pennsylvania mining district. This alternative excludes the 360 acre area covered by mining claims near the Pennsylvania mining district. There is no significant impact as no strategic or critical mineral materials are known to exist.

Salable Minerals - The two areas comprising 7,000 acre area with favorable (Class 2) mineral potential and the 77,165 acre area with inferred favorable (Class 3) mineral potential would be withdrawn from common variety mineral material disposals.

Leasable Minerals - Oil and gas leases cover the entire area in this alternative. The 84,165 acre area with unqualified (Class 4) and unfavorable or unknown (Class 5) mineral potential would be subject to one of the two outcomes as described in General Impacts.

Conclusion - Strategic or critical mineral materials and minerals with a greater than 50 percent import reliance are not known to occur in significant amounts. No areas covered by mining claims are included with this alternative. Therefore, using the classification in Chapter 3 (Figure 3-2) and the rationale for determining the threshold level of significant impact described earlier (Figure 4-1), there is no significant impact.

Wildlife: This alternative would complicate efforts to increase mule deer populations through proposed burning of portions of 13,440 acres of pinyon-juniper in the southeastern portion of the WSA. If, following further study, the proposed burning does not meet the standards set forth in the Wilderness Management Policy (September 1981) the project will not be undertaken and deer populations would remain at present levels in the area. If these conditions are not met, then the opportunity to improve this winter range, and consequently, deer numbers, will be foregone though in all probability, the project can be implemented within the standards. Road construction and possible mining activity would be curtailed thus benefiting habitat for deer, raptors, and riparian areas. Migrant peregrine falcons (Federally endangered) and spotted bats (State rare) are special species which may be here. Overall, benefits to wildlife will accrue.

Livestock Grazing: This alternative would create minor impediments to increasing livestock management intensity. Two projects, a five-mile allotment boundary fence and a pipeline have been proposed in the suitable portion of this alternative. The pipeline and fence would alleviate livestock grazing pressure in the area by better distributing livestock and would be allowed under the WMP. If the projects are not allowed; then grazing pressure will continue to concentrate too heavily on certain limited areas. More careful planning and implementation will be necessary. Impacts would be insignificant.

Lands: Impacts may occur by restricting any future realignment of the current railroad right-of-way. However, wilderness designation would not be the only restricting factor, as topography is presently a limiting factor for realignment also. There is no significant impact.

Delamar Mountains

0 acres suitable
126,257 acres nonsuitable

Wilderness: This alternative would designate 0 acres as wilderness. Activities incompatible with wilderness values will likely occur on the bajadas of the western, southern and southeastern portions of the WSA, in proximity to the Pony Well cherrystem road, and on the western peaks of the central mountains. These activities will consist of material sites, power line construction, range projects consisting primarily of water development, commercial and recreational ORV use, and communications sites. These activities will cause the loss of moderate to outstanding wilderness values in the central mountainous area, the highlands of the southern end, portions of the core and in the northwestern area. Low wilderness values will be lost on the western, southern and southeastern bajadas and in the lowlands portion of the southern canyon and mesa terrain.

Impacts would be negative and significant. Although the WSA meets the criteria of possessing outstanding wilderness values in scattered localized areas, it does not exhibit a high degree of attractiveness in substantial portions of its area, which tends to mitigate the effect of nondesignation on wilderness values.

Recreation: In all probability, new roads constructed in conjunction with speculative seismic exploration, communication sites, power line access or range projects will increase ORV access and may increase opportunities for vehicle camping, sightseeing and hunting. This will occur primarily on the south end, in Bomber Wash and along the western bajada. Primitive recreation opportunities will probably remain in the central mountainous region and in portions of the northwestern region. Impacts will not be significant.

Meadow Valley Range

97,180 acres suitable
88,564 acres nonsuitable

WILDERNESS: This alternative would designate 97,180 acres as wilderness and preserves most of the WSA's outstanding and a portion of its moderate wilderness values. The nonsuitable area of 88,564 acres contains large areas of moderate, small areas of outstanding and medium areas of low wilderness values. Elevations range from 5,500 to 1,750 feet and the area is approximately 5 to 6 miles wide and 34 miles long. As configured, this alternative preserves the wilderness values of the rugged mountains of the WSA's western side and most of scenic Hackberry Canyon.

The wilderness integrity of the suitable area can be retained with minimal management. Terrain precludes vehicular access over most of the area except for some ORV use which has occurred in the Hackberry Canyon, Wildcat and Farrier Washes. Such use is likely to occur sporadically in the future but does not seriously impact wilderness values. In the northern "toe" area topographic and vegetative screening are good but the narrowness could allow the intrusion of some outside sights and sounds although this is not considered seriously compromising. As configured, this unit is manageable as wilderness over the long term. The unsuitable area has past mining exploration in the outstanding to moderate wilderness values in the Bunker Hills. Future random activities of this nature would likely destroy the remaining wilderness values of this approximately township-sized area. South of the Bunker Hills is a 7,000 acre area of non-descript low hills and washes with low wilderness values which would probably eventually be used by ORVs, thus destroying the wilderness values extant there.

Most of the large central bajada region is included as nonsuitable. This area of approximately 53 sections has mainly moderate wilderness values. Except for an occasional exploration trail or casual use, this area will likely remain undisturbed and thus its wilderness values will remain intact.

At Hackberry Canyon, the lower end of this scenic drainage is nonsuitable. Continued use by hunters in ORVs and further development of cattle facilities at Hackberry Spring will probably degrade this area's moderate to outstanding wilderness values. North of Hackberry Canyon, Vigo Canyon drains most of and area of approximately 31 sections determined to be nonsuitable. Numerous ORV trails crisscross this area, having gained access through Vigo Canyon. Wilderness values are low here and ORV use will continue to increase thus assuring destruction of remaining wilderness values. Range projects will also be installed here, likely affecting some wilderness values.

Within the suitable area, elevations range from 3,200 to 5,500 feet and include preponderantly low desert shrub with a very limited region of pinyon-juniper in the northern or "toe" area.

The suitable area is very natural with only minor mining exploration intrusions. Because of its size and precipitous topography along the western edge, solitude is outstanding, although somewhat depreciated due to the relative narrowness.

The entire western edge is a mountain range of considerable relief. In the "toe" area, a very attractive natural arch is included. Further south,along the escarpment, Sunflower Mountain provides a focal point with its spectacular base of white rock. The remainder of the west side is a series of peaks, cliffs and slick-rock zones, cut with small sharp canyons and occasional steep- sided canyons that penetrate through the main ridge.

Hiking, camping, horseback riding, nature study and hunting are of moderate quality.

Visitation is currently almost non-existent except as noted for ORV use in some washes. Designation will increase this, but not to very high levels.

The nonsuitable area includes areas of naturalness, outstanding solitude and scenic values. The bottom of Farrier Wash has attractive red-eroded hills. Hackberry Spring and lower Hackberry Canyon has greenery and beautiful red and white cliffs.

In this alternative, those areas of low and moderate wilderness values would be subject to impacts associated with multiple resource management. Significant beneficial impacts occur in preserving major areas of the higher wilderness values.

Recreation: Substantial primitive recreation values present within one hour's drive of the Las Vegas SMSA would be preserved. Good hiking, backpacking and excellent photographic opportunities are preserved. ORV opportunities would remain open on most of the central bajada, Vigo Canyon drainage and lower Hackberry Canyon. ORV usage would not change substantially nor would visitation increase more than 100 visitor days annually for the first years.

Loss of limited primitive recreation opportunities would probably occur over the long term in the Bunker Hills, central bajada and Vigo Canyon drainage, thus creating an adverse impact.

A significant amount of primitive recreation values are preserved thus a beneficial impact accrues with this alternative. On balance, the better primitive recreation resources are preserved in this alternative and the net effect is beneficial.

Energy and Minerals: Locatable Minerals - Under this alternative a 166 acre area with favorable (Class 2) mineral potential in the north part of the WSA with estimated large reserves of perlite would be withdrawn from mining claim location and designation would affect potential development of that resource. The five areas comprising 37,843 acres with inferred favorable (Class 3) mineral potential, the 100 acre area with mining claims on the northwest WSA boundary and the 1,245 acre area in the southeast portion both with unqualified (Class 4) mineral potential and the five areas comprising 57,826 acres with unfavorable or unknown (Class 5) mineral potential would be withdrawn from mining claim location. This alternative would not include the 180 acre area with inferred favorable (Class 3) gypsum mineral potential and other areas comprising 21,000 acres with inferred favorable (Class 3) lime and unknown potential would be excluded. In addition, this alternative would not include four areas comprising 4,000 acres with unqualified (Class 4) mineral potential, with one covered by mining claims and the remaining five areas comprising 63,384 acres with unfavorable or unknown (Class 5) mineral potential. There is no significant impact, as strategic or critical minerals and import reliance minerals are not known to exist in any of the claim areas.

Salable Minerals - Seven areas comprising 8,277 acres with favorable (Class 2) mineral potential and the 88,903 acre area with inferred favorable (Class 3) mineral potential would be withdrawn from common variety mineral material disposals.

Leasable Minerals - A 97,180 acre area with unqualified (Class 4) oil and gas mineral potential and the unfavorable or unknown (Class 5) mineral potential would be subject to one of the two outcomes described in General Impacts. The 1,300 acre area with unqualified (Class 4) phosphate rock potential included in this alternative would be withdrawn from mineral leasing.

Conclusion - Strategic or critical mineral materials or minerals with a greater than 50 percent import reliance are not known or inferred to occur. Using the classification of Chapter 3 and the rationale for determining the threshold level of significant impact described earlier (Figure 4-1) there would be no significant impact.

Wildlife: This alternative includes fractional to substantial portions of the Resource Area's wildlife habitat, as follows: mule deer yearlong, 2.0 percent; bighorn yearlong, 30 percent, and bighorn summer crucial, 29 percent. Some habitat for nongame species such as golden eagles and other raptors, and possibly the spotted bat (State rare) would be better protected. The difficulty of installing and maintaining guzzlers would be increased by limiting access to foot or horseback and prohibiting motorized equipment. This alternative provides moderate wildlife benefits.

Livestock Grazing: This alternative includes two proposed reservoirs and one gap fence. Since the purpose of the reservoirs and fence is to relieve grazing pressures around existing waters they may be allowed, however, construction and maintenance by motorized equipment, the most feasible and least costly means, may be prohibited. No effect on AUMs would occur.

Mormon Mountains

23,960 acres suitable
138,927 acres nonsuitable

Wilderness: This alternative preserves the outstanding wilderness values in the craggy peaks of the central core area. These were described by one climber as an "array of wild rocks cut by numerous deep canyons and gorges; sharp limestone peaks, jut skyward and cliffs drop sheer more than 800 feet." (Mc Clure, 1975 in Rusco, 1983).

The nonsuitable area of 138,927 acres contains fringes of the higher rugged mountains, a large surrounding area of more rounded, less incised mountains, the piedmonts and badlands of the western portion and the extremely preciptious Moapa Peak complex on the south.

Elevations of the suitable area range from approximately 4,000 feet to 7,500 feet and the area is irregularly shaped roughly 9 by 7 miles in extent.

Except where a way leads to a big game guzzler on the north side, ORV use will not be a problem due to the highly incised terrain. However, definition of the boundaries both descriptively and on the ground will be difficult and may lead to confusion. Because this alternative is configured to lie entirely within the central mountainous core which is circular, its boundaries are defined in terms of peaks, ridges and protracted survey corners. Most of these lines loop around springs and road heads and cut across the grain of the terrain. This will make exact boundary definition difficult.

The suitable area includes bighorn sheep habitat, relict ponderosa pine stands, pinyon-juniper and desert shrub communities. Excellent challenging day and overnight hikes, rock climbs and expansive views are included. Spelunking opportunities are present as well as some of the area's abundant cultural resource sites.

With the exception of three big game guzzlers located near the northern boundary, the area is extremely natural. Because of the rugged terrain, opportunities for solitude are outstanding. Day hikes and overnight trips to various peaks caves and canyons are challenging and are outstanding in the suitable area. Outstanding climbing and scrambling opportunities exist. Photographic opportunities are great. Because of the apparent continuing trend of increasing aridity as evidenced in the relict ponderosa pine stand and from fossil pack rat middens and because of the relative geographic isolation of the mountain, the opportunity to study interesting botanical features such as endemism certainly exists within the suitable and nonsuitable area.

Surrounding the suitable area is an uplands of 52,000 acres split approximately 2/3 outstanding and 1/3 moderate wilderness values. Construction of range improvements such as fences and water developments and big game guzzlers is a manner incompatible with wilderness preservation will likely occur here. Avocational mining exploration, particularly in the southern, western and northern sections will probably continue. An incremental loss of substantial areas of moderate to outstanding wilderness values will occur over time. In addition, these incursions will permit outside sights and sounds to intrude portions of the core. In the Moapa Peak region, very steep terrain will preclude any loss of wilderness values except possibly around the base of the feature. This uplands also possess nearly one half of the cultural resource sites and the greatest variability of sites found in the Mormon Mountains study area (Rusco, 1981). These sites would remain available for scientific excavation but would not have the added protection from vandalism and from salvage forced by other projects. Thus, the net impact to cultural resources is adverse. The remaining nonsuitable areas are primarily bajadas with generally low and occasional moderate wilderness values and the Meadow Valley Wash itself. ORV use, mining exploration, vehicle camping and hunting will grow with time and compromise wilderness values on the southwestern bajadas on portions of the northern bajada and on some of the eastern bajadas and valleys. The western, northwestern and portions of the northern bajadas will remain largely unscathed because their incised rough terrain renders travel, particularly across the grain difficult.

Designation will probably result in an increase in visitation of several hundred visitor days. This will result in some loss of solitude on more popular routes such as to Mormon Peak.

This alternative results in protection of outstanding wilderness values and primitive recreation resosurces and also will result in the loss of low, moderate and outstanding wilderness values, thus it is both significantly beneficial and significantly adverse.

Recreation: This unit is readily accessible to Las Vegas via I-15 and is currently the most visited of the five WSAs in the Resource Area. Designation will probably result in more increased usage here than in any of the others. The suitable area preserves excellent caving, dayhiking, unique backpacking and climbing opportunities.

On the nonsuitable area ORV use, vehicle camping at springs and recreational mining endeavors, and vehicle-borne hunting or trapping can continue. Olimbing and hiking in the steep Moapa Peak area will continue.

Continued road development will reduce primitive recreation opportunities in portions of the nonsuitable area and permit greater vandalism of such attractions as rock art sites and caves. An adverse impact results from loss of primitive recreation values and vandalism of sightseeing or study objectives.

Energy and Minerals Resources: Locatable Minerals - Under this alternative the predominating 23,150 acre area with inferred favorable (Class 3) mineral potential would be withdrawn from mining claim location. Small portions of three areas comprising 420 acres with unqualified (Class 4) mineral potential near old mine prospects in the north, south, and west edges of this alternative would be withdrawn from mining claim location, but the alternative actually excludes the disturbed prospect areas. Two areas comprising 325 acres on the west and one area comprising 95 acres on the north, all with unfavorable or unknown (Class 5) mineral potential, would be withdrawn from mining claim location.

Salable Minerals - Under this alternative the 244 acre area with favorable (Class 2) mineral potential and the 23,716 acre area with inferred (Class 3) mineral potential would be withdrawn from common variety mineral material disposal.

Leasable Minerals - The entire WSA is covered by oil and gas leases.

Under this alternative, the 23,960 acre area with unqualified (Class 4) oil and gas mineral potential and unfavorable or unknown (Class 5) other leasable mineral potential would be subject to two outcomes depending on whether or not a lease exists at the time designation as described in General Impacts.

Conclusion - The alternative excludes all areas within the WSA containing mining claims or old prospects. Strategic or critical mineral materials and import reliance minerals are not known to occur in significant amounts. Therefore, using the classification of Chapter 3 (Fig. 3-2) and the rationale for determining the threshold level of significant impact described at the beginning of Chapter 4 (Fig. 4-1), there is no significant impact.

Wildlife: The suitable area includes the following portions of the WSA's habitat. Bighorn sheep yearlong, 29%; bighorn sheep summer crucial, 40% (100% overlap of yearlong); and deer yearlong, 27%. The nonsuitable area includes tortoise and quail crucial habitat. Maintenance of the large guzzlers on the north side would be more difficult due to the requirements that motorized equipment not be used.

The nonsuitable area includes the remainder of the bighorn sheep and deer habitat as well as tortoise and quail crucial habitat. Mining exploration and casual ORV use will increase in the southeastern portion of this WSA, affecting adversely to some degree the tortoise, quail and bighorn habitat in this area, unless 43CFR 3000 regulations and/or ORV designations are effectively instituted.

Beneficial impacts are achieved through protection of somewhat less than 1/3 of the area's ungulate habitat but the area is so rugged that the only likely impact of nondesignation would be helicopter installed communications facilities on the higher peaks.

In the nonsuitable area, normal multiple use activities and operations of the mining law will result in habitat disturbances detrimental to bighorn sheep, tortoise and quail. Deer will be affected to a much lesser extent.

South Pahroc Range

28,395 acres suitable
205 acres nonsuitable

Wilderness: This alternative would designate 28,395 acres as suitable and 205 acres as nonsuitable. The suitable area is approximately 4-5 miles wide and 12 miles long. Designation would include an outstanding wilderness resource within 100 miles of Las Vegas. The eastern side is a spectacular escarpment while the bulk of the remainder is very rugged with large boulders throughout. Seclusion and solitude are readily available except for occasional military overflights. Small trees and numerous large boulders insure the ready availability of screening and this solitude. Unusual vegetation (white fir) is present in places. Many challenging hiking, scrambling and camping opportunities are present. Because of the terrain, manageability would be no problem with the following exceptions. Small areas on the north, northwest and southeastern sides are relatively flat and thus accessible to ORVs. Such use would be minor and not compromise the wilderness values elsewhere in the WSA. Leaving these areas in the suitable portion results in better boundary definition.

A small area on the northeastern corner is recommended nonsuitable to accommodate a claimed perlite resource which may be present. Wilderness values range from low on the flatter portions to outstanding on the escarpment. Some loss of wilderness values may occur there if development ensues, although a nearby mine is mostly underground.

Significant beneficial impacts would ensue with designation and addition of this unique and outstanding wilderness resource to the National Wilderness Preservation System.

Recreation: This alternative preserves an area offering an outstanding opportunity for primitive recreation. Hiking is fantastic, though ruggedness limits dayhikes. Backpacking is rated as the best challenge in the Resource Area, providing challenges for novice and expert, alike. Secluded camping sites are nearly endless. The entire area is a remote, rugged and little known region which would provide fresh experiences to all users. Use would undoubtedly increase with designation, but the challenge of the area and lack of focal points would limit visitation and spread it out. The area offers some bird hunting and possible bighorn sheep hunting with proposed reintroduction. Little ORV use is present or possible. Designation would result in a very significant beneficial impact.

Energy and Mineral Resources: Locatable Minerals - Under this alternative impacts would be the same as in the All Wilderness Alternative, except that the 138 acre area covered by mining claims and the 49 acre area east of this that is not claimed would be excluded. This would leave the remaining 362 acre area with favorable (Class 2) mineral potential, the 939 acre area with inferred favorable (Class 3) mineral potential and the 27,112 acre area with unqualified (Class 4) and unfavorable or unknown (Class 5) mineral potential to be withdrawn from mining claim location.

Salable Minerals - Under this alternative impacts would be the same as in the All Wilderness Alternative except that the 187 acre area would be excluded leaving the remaining 28,413 acre area with inferred favorable (Class 3) mineral potential to be withdrawn from common variety mineral material disposals.

Leasable Minerals - Under this alternative the impacts would be the same as in the All Wilderness Alternative, except excluding the 187 acre area. The remaining 28,413 acre area with unqualified (Class 4) mineral potential would be withdrawn from leasing activities if not under a lease at the time of designation.

Conclusion - There is no significant impact.

Wildlife: This alternative protects habitat for mule deer and potentially reintroduced bighorn sheep from potential mining intrusions and possible communications sites, although potential future projects for wildlife habitat enhancement may be complicated. A small amount of bighorn and mule deer habitat may be lost if the perlite claims are developed. Wildlife benefits would be significant.

All Wilderness Alternative

588,423 acres suitable
0 acres nonsuitable

Clover Mountains (Grapevine)

84,935 acres suitable
0 acres nonsuitable

Wilderness: This alternative is virtually the same as the Preferred Alternative and includes all of the WSA's outstanding wilderness resources. This configuration preserves the wilderness integrity of the entire area. Some outside sights and sounds could intrude in the localized area adjacent to the Pennsylvania Mining District in the northwest portion of the WSA, if development ensued there. Some claims overlap the WSA near the Pennsylvania

Mining District. Activity on these claims, which are on the fringe of the WSA, could locally affect wilderness values over the short term. In the southwestern portion of the WSA, lands are susceptible to ORV use but no evidence of such use exists now and the Union Pacific railroad presently controls access across its right-of-way. Since Cottonwood Canyon is the major access point, control would be easy to obtain, if ORV use became a problem.

Designation would protect the area from possible impacts due to vegetation alteration projects, mineral exploration or extraction activities and access road construction. Substantial wilderness resources would be preserved, thus a significant beneficial impact would accrue.

Energy and Mineral Resources: Locatable Minerals - Impacts would be the same as in the Preferred Alternative, except that the 360 acre area covered by mining claims near the Pennsylvania mining district would be included in the withdrawal. This area is comprised of 265 acres with unqualified (Class 4) mineral potential and a 95 acres with unknown or unfavorable mineral potential (Class 5).

Salable Minerals - Impacts would be the same as the Preferred Alternative except that an additional 360 acre area with inferred favorable (Class 3) mineral potential would be withdrawn from mineral material disposals.

Leasable Minerals - The impacts would be the same as in the Preferred lternative except with the addition of a 360 acre area with unqualified (Class 4) and unfavorable or unknown (Class 5) mineral potential.

Conclusion - Strategic or critical mineral materials and minerals with a greater than 50 percent import reliance are not known to occur in significant amounts. Therefore, using the classification in Chapter 3 (Figure 3-2) and the rationale for determining the threshold of significant impact described earlier (Figure 4-1), there is no significant impact.

Wildlife: Same as for the Preferred Alternative.

Livestock Grazing: Same as for the Preferred Alternative.

Lands: Same as for the Preferred Alternative

Delamar Mountains

126,257 acres suitable

0 acres nonsuitable

Wilderness: This alternative protects wilderness values ranging from outstanding to low. Since these values are discussed in Chapter 3, they will not be repeated here.

On the west side, some material sites inadvertently left in the WSA, highway 93, an existing, an approved, and a proposed powerline all seriously depreciate wilderness values for a distance of 2 to 3 miles adjacent. Beyond this distance, steepening terrain screens these sources. Slight problems with vehicles trying to travel in washes has existed and will probably continue, but terrain features preclude this becoming a serious problem. On the south side, the terrain is a bajada cut by washes which extend as canyons into the mesa-like country of the WSA's southern region. The bajada is affected by sights and sounds from highway 93 and use of the Kane Springs road. Hunters and occasional ORVers use this bajada and the washes leading north. Long term maintenance of wilderness values on the bajada would be difficult due to the outside influences and ease of access.

Occasional use of the canyons is confined to the active portion of the wash and wouldn't be a major problem. Bajadas and similar gentle terrain on the southeastern and eastern side would be hard to manage as wilderness for the long term. Short cherrystems and old ways are frequently used by local and metropolitan area hunters and trappers. Use of these would be difficult to control. Use of the Pony Well cherrystem road and areas adjacent to it by ORVs would affect wilderness values in the vicinity as screening is not good in this area. Implementation of a court agreement to provide water for livestock in the Pony Well portion of the WSA may result in adversely affecting wilderness values in the vicinity. Following an unsuccessful attempt to obtain well water, this agreement may be discharged through either a long pipeline which could be installed in the existing road or catchment apron and guzzler to utilize precipitation. The pipeline would not affect manageability or wilderness values. A large catchment and storage tank, depending upon size, design and location could adversely affect wilderness values in the vicinity. Construction of 2 1/2 miles of fence necessary to protect range values from overuse will have an insignificant effect on wilderness values if carefully located and constructed. Flatter land on the northern end of the WSA is transected by a way frequently used as a cutoff route. Use of this route and adjacent land would be difficult to control and would destroy the low wilderness values there. The remainder of the WSA could be managed as wilderness for the long term.

Designation would protect the wilderness values in the rugged central core area and southern canyons and eastern regions. Protection of an overall moderate quality wilderness resource, the value of which is enhanced by the relative ease of access from Las Vegas, would be a significant beneficial impact.

As the area is relatively near to Las Vegas and readily accessible from highway 93, management for wilderness resource values on the flatter western and southern fringes will be expensive and probably fruitless.

Recreation: Because this area is easily accessible to Las Vegas by a 90 minute drive, designation will result in a slight increase in visitation of probably less than 150 visitor days. This alternative preserves opportunities for dayhiking and backpacking. Random or organized ORV use along the western, southern, and southeastern bajadas would be unsanctioned and this alternative represents a slight reduction in available area for such use. Impacts would be minor to ORV enthusiasts and hunters, and moderately beneficial to primitive recreation users. Overall, benefits will be moderatly beneficial.

Energy and Mineral Resources: Locatable Minerals - The three areas comprising 17,633 acres with inferred (Class 3) mineral potential would be withdrawn from mining claim location. The remaining 10,864 acre area with unqualified (Class 4) and unfavorable or unknown (Class 5) mineral potential would be withdrawn from mining claim location.

Salable Minerals - Two areas comprising 2,133 acres with very favorable (Class 1) mineral potential for sand and gravel resources along the southwest and southeast WSA boundary would be included in this alternative. Four material site rights-of-way comprising 343 acres within the area with very favorable mineral potential along the southwest WSA boundary would not be affected, but designation would significantly affect disposal activities in the remaining areas with very favorable potential. The six areas comprising 35,400 acres with favorable (Class 2) mineral potential and the predominating 88,381 acre area with inferred favorable (Class 3) mineral potential would be withdrawn from common variety mineral material disposals.

Leasable Minerals - The entire area of this alternative is covered by oil and gas leases but there has been no activity on these leases. Under this alternative the 126,257 acre area with unqualified (Class 4) oil and gas mineral potential, the 342 acre area with unqualified (Class 4) phosphate rock potential and the 125,915 acre area with unfavorable or unknown (Class 5) other leasable mineral potential would be subject to one of the two outcomes as described in General Impacts.

Conclusions - Strategic or critical mineral materials and minerals with a greater than 50 percent import reliance are not known or inferred to occur. Using the classification from Chapter 3 (Fig. 3-2) and the rationale for determining the threshold level of significant impact described earlier (Fig. 4-1), there is no significant impact.

Wildlife: Minor portions of the Resource Area's wildlife habitat are protected as follows: deer yearlong, 7%; bighorn sheep yearlong, 15%; desert tortoise crucial , 23%; quail crucial 1.4%, golden eagles, prairie falcons, other raptors, possibly spotted bats (State rare, and other species are protected from mining and ORV intrusions and day-to-day vehicle traffic). It would increase the difficulty of installing and maintaining quail or big game guzzlers by requiring that access for this purpose be accomplished by foot or horseback and no motorized equipment be used. Numbers of animals would be unaffected from current numbers except that desert tortoise habitat would receive additional protection. This alternative provides some benefits to several species.

Livestock Grazing: Two and one-half miles of fencing and a water supply in Bomber Wash are proposed in the WSA. The fence would be built to enhance and protect present vegetative resource values. Water is presently provided in Bomber Wash (Pony Well Road) by water haul on a cherrystem road. A permanent supply system can probably be developed on the cherrystem road. If a permanent system cannot be developed, this would violate the conditions of the court settlement and could subject the Bureau to further litigation. Failure to develop fencing and water sufficient to continue use of this pasture at present levels could result in impacts of decreased trend and condition of native vegetation as well as a potential loss of 10-20% of the authorized AUM's. This effect would be a significant adverse impact although it appears that with adequate available mitigation, this can be averted through project development

Lands: A large band of withdrawals, proposed withdrawals and WSAs under consideration is aligned east-west across the State. This land is dominated by the DOE-DOD-USFWS (Nevada Test Site, etc.) block on its west end. The DOE-DOD-USFWS block is 100+ miles wide at this point, there is a gap of 1/4 to 1 1/4 mile before the west boundary of the 13 1/2 mile wide Delamar WSA is encountered. Thus, this WSA tends to contribute to this north-south impediment.

A need has been identified (Intermountain Power Project and White Pine Power Project) to expand the existing utility corridor bordering the west side of the WSA. This corridor serves local and growing western regional needs. The withdrawn area and topography restrict expansion opportunities to the west while the WSA and topography are similarly restrictive on the east. A narrow strip of suitable topography between the mountains and the highway on the

WSA's west side would be included in this alternative and this would have a significant adverse impact in terms of use of this corridor. The consequent reduction in utility line placement flexibility may impact other resources (e.g. visual resource) by limiting the location of the powerline itself. Therefore, this alternative would have a significant adverse impact to the lands program, but is limited to the western bajada area of the WSA.

Meadow Valley Range

185,744 acres suitable
0 acres nonsuitable

Wilderness: This area's wilderness values are discussed in Chapter 3 and are not repeated here.

The wilderness integrity of the WSA can be retained with minimal management. Terrain precludes vehicular access over most of the area except for some ORV use which has occurred in Hackberry and Vigo Canyons, Farrier and Wildcat Washes. Such use is kilely to continue sporadically in the future in Hackberry, Farrier and Wildcat, without seriously affecting wilderness values. In Vigo Canyon, however, use is much heavier and access is gained to a large area suitable for ORV use. Numerous ways cross this area and access would be very difficult to control, consequently this portion of the WSA is not manageable as wilderness for the long term. Without access being constructed, the large central bajada would not receive ORV pressure and would be readily manageable as wilderness.

Small areas of mining claims on the northwest and southeast fringes could cause local impacts on wilderness values if development occurred on them, but would affect only the immediate locale.

Opportunities for solitude are rated as good. Other than low level jet aircraft, external sights and sounds have little effect in the area once away from the borders. Outside sights and sounds may affect the northernmost extension of the WSA or "toe" area, but the very good wilderness values present there outweigh the potential for negative external influences.

A very significant beneficial impact would accrue in protecting this very large area with its solitude and state protected plants.

Recreation: This alternative will preserve the maximum amount of primitive recreation values present. At one hour distance from Las Vegas, this WSA could become an important resource for this type of recreation. Good hiking, backpacking and excellent photographic opportunities are preserved. Hunting for birds, deer and bighorn sheep are rated as good. Most bird hunting occurs around the edges of the unit and would remain the same.

ORV use occurring occasionally in the Vigo Canyon region, Hackberry Canyon, Farrier and Wildcat Washes, and in some of the other southern washes would be precluded. Also lost would be the opportunity to expand ORV use in the central bajada region. Impacts would be significantly beneficial except for some loss of ORV opportunity which is not significant.

Energy and Mineral Resources: Locatable Minerals - Under this alternative a 166 acre area with favorable (Class 2) mineral potential in the north part of the WSA with estimated large reserves of perlite would be withdrawn from mining claim location and potential development of that resource would be affected. Six areas comprising 60,474 acres with inferred favorable (Class 3) mineral potential, the five areas comprising 4,531 acres with unqualified (Class 4) mineral potential and seven areas comprising 120,573 acres with unfavorable or unknown (Class 5) mineral potential would be withdrawn from mining claim location. The areas along the central northwest WSA boundary and in the southwest corner of the WSA contain mining claims that would be included in this alternative. There would not be a significant impact, as strategic or critical and import reliance minerals are not known to exist in any of the claim areas.

Salable Minerals - Under this alternative the six areas comprising 74,426 acres with favorable (Class 2) mineral potential and the remaining 111,318 acre area with inferred (Class 3) mineral potential would be withdrawn from common variety mineral material disposals.

Leasable Minerals - The entire WSA is leased for oil and gas. One lease was drilled with unknown results in the 1970's. No activity has occurred since. The 187,744 acres with unqualified (Class 4) oil and gas potential including 1,010 acres with unqualified (Class 4) phosphate mineral potential, and unfavorable or unknown (Class 5) other leasable mineral potential would be subject to one of the two outcomes described in General Impacts.

Conclusion: Strategic or critical mineral materials or minerals with a greater than 50 percent import reliance are not known or inferred to occur. Rising the classification of Chapter 3 (Fig. 3-2) and the rationale for determining the threshold level of significant impact described earlier (Fig. 4-1), there is no significant impact.

Wildlife: This alternative protects fractional to significant portions of the Resource Area's wildlife habitat, as follows: Mule deer yearlong, 4.2%; quail crucial 0.2%; bighorn yearlong 35%; and bighorn crucial summer, 29%. Habitat for non-game species such as golden eagles and other raptors, and possibly, the spotted bat (State rare) would be protected. The difficulty of installing and maintaining quail or big game guzzlers would be increased by requiring access be accomplished by foot or horseback and no motorized equipment be used. No effect on present numbers of animals would occur. Protection of habitat from disturbance would be beneficial.

Livestock Grazing: Eight range projects; a catchment reservoir, four reservoirs, one pipeline and five to 10 miles of fence are proposed in the WSA. The water projects were identified to provide for better livestock distribution therefore providing better grazing management and protection to the vegetative resource. These projects could be allowed within Interim or Wilderness Management Policy Guidelines. Proper livestock distribution may be impeded if these projects are not installed and could result in declining vegetation trend. Because, with proper planning, these projects are permissible, no change in AUMs or vegetation due to designation will occur, thus there is no significant impact.

Lands: Impacts would be similar to those described in the General Impacts section with one exception; adverse impacts may occur by restricting any future realignment of the current Union Pacific Railroad right-of-way borders the east side of the WSA. However, wilderness designation in itself is not the only restrictive factor since the topography of the area is also limiting. Impacts are not significant.

Mormon Mountains

162,887 acres suitable
0 acres nonsuitable

Wilderness: This alternative preserves outstanding wilderness values in the central core plus moderate values in the surrounding zone. Because these values are described in Chapter 3, they are not repeated here. Intrusions associated with the numerous cherrystems adversely affect large surrounding areas, but, because the WSA is so large, these affected areas do not constitute a major problem because of the time and distance involved for the user to get from one area of intrusions to the next.

Access to the southwestern bajada is readily achieved by several cherrystems and terrain is such that ORV use would be impossible to control and wilderness values would be lost over the long term. A large portion of this bajada is also covered by post FLPMA placer claims. Activities on these claims would make preservation of wilderness values difficult.

The southeastern quadrant of the WSA is penetrated by a cherrystem road and several ways. This access is not readily controlled due to the nature of the terrain. ORV use would be somewhat, but not insurmountably difficult to control and some loss of wilderness values over the long term would occur.

Along the east side are several bajadas or gentle basin terrain types which are accessible to ORV use from cherrystems, ways and cross country. This use would be difficult to control and some wilderness values would be lost over the long term.

On the northern side, ORV use of ways and washes could not be entirely controlled on the bajada portion, but would not constitute a serious problem due to the nature of the terrain and the distance from paved access.

The northwest and western bajadas are incised enough that ORV cross country travel is very difficult and thus this area is manageable as wilderness over the long term.

If activity commenced on the cherrystemmed vermiculite prospects on the WSA's west side, some outside sights and sounds could affect the surrounding area.

A significant beneficial impact would occur with this alternative through preservation of an outstanding wilderness resource readily accessible from Las Vegas and I-15.

Recreation: This unit is readily accessible to Las Vegas via I-15 and is currently the most visited of the five WSAs in the Resource Area. Designation will probably result in more increased usage here than in any of the other four. Increased usage would probably amount to 400 or 500 visitor days. This alternative preserves excellent caving, dayhiking, unique backpacking and climbing opportunities. ORV use along existing cherrystems will probably continue to increase, but would be illegal on the bajadas, many of which are susceptible to such use.

Increased visitation will reduce opportunities for solitude along some of the more popular routes and at popular destinations. Preservation of primitive recreation resources is a significant beneficial impact in this alternative.

Energy and Mineral Resources: Locatable Minerals - Under this alternative a portion of the 25 acre area not within the cherrystem with favorable (Class 2) mineral potential for copper around the old Whitmore gold prospect in the south central portion of the WSA would be withdrawn from mining claim location. The prospect itself is excluded by the cherrystemmed road to the abandoned workings, but the remaining area is not covered by mining claims and withdrawal would significantly affect potential development of the resource if it were to profitably exist. The predominating 88,000 acre core and outlying areas with inferred favorable (Class 3) mineral potential, the large peripheral 60,000 acre area with unfavorable or unknown (Class 5) mineral potential, and the remaining 15 areas comprising 14,862 acres with unqualified (Class 4) mineral potential would be withdrawn from mining claim location. Five of the 15 areas with unqualified potential contain mining claims that would be included in this alternative. Some impact in relation to possible additional costs of reclamation may occur to a claimant if a valuable discovery was proven on a claim if the area was designated as wilderness.

There would not be a significant impact, as strategic or critical minerals and import reliance minerals are not known to exist in any of the claim areas.

Salable Minerals - Under this alternative the 73,815 acre area with favorable (Class 2) mineral potential and the 88,600 acre area with inferred favorable (Class 3) mineral potential would be withdrawn from common variety mineral material disposal.

Leasable Minerals - The entire WSA is covered by oil and gas leases, with 162,887 acres leased in this alternative. Under this alternative, the 162,887 acre area with unqualified (Class 4) oil and gas mineral potential and unfavorable or unknown (Class 5) other leasable mineral potential would be subject to one of the two outcomes described in General Impacts.

Conclusions - Strategic and critical mineral materials and minerals with a greater than 50 percent import reliance are not known to occur in significant amounts. A significant effect on minerals would occur on approximately 25 acres identified as having favorable mineral potential for containing strategic or critical and import reliance mineral resources not known in significant amounts. Using the classification of Chapter 3 and the rationale for determining the threshold level of significant impact described earlier (Fig. 4-1), there is no significant impact to the remaining areas.

Wildlife: This alternative would protect wildlife and habitat from human intrusions particularly on the bajadas and on areas peripheral to the rugged central core area. Among species benefited would be deer, bighorn sheep, quail, desert tortoise and raptors. Spotted bats (State rare) may be present. As with the the spotted bat, golden eagles would also be benefitted. Bighorn sheep populations in this range inexplicably fell several years ago and designation would probably leave the herd subject to such population fluctuations. To the extent that designation arrested habitat intrusions it would be beneficial. A Habitat Management Plan (HMP) was developed to resolve bighorn sheep and livestock conflicts. Some management proposals in the HMP for the area would be more difficult to accomplish. These include a proposed vegetation manipulation for bighorn sheep which may require more intensive planning and careful implementation to meet wilderness management standards. A total of 9 large capacity guzzlers are proposed. Installation and maintenance of these guzzlers may be made more difficult due to the proscription on motorized equipment and smaller more numerous guzzlers may be necessitated. However, in the case where permanent roads might otherwise result in conjunction with guzzlers, this alternative would greatly reduce human intrusion at the drinkers and thus foster the increase in populations as intended. Fencing to keep cattle out of direct competition with bighorns would be permissible.

With most of the HMP's project work possible under the Wilderness

Management Policy, efforts to increase bighorn populations in this WSA can continue. Impacts on bighorn sheep will range from no effect to beneficial and be beneficial to other species.

Livestock Grazing: Three projects including additional storage capacity at one spring, and two spring developments with 2 to 3 miles of pipeline are proposed for this WSA. These projects are to alleviate conflicts between livestock and bighorn sheep and can be accomplished within non-impairment guidelines. There is no significant impact.

Lands: Impacts would be similar to those described in the General Impacts section with one exception. Adverse impacts may be caused by restricting any future realignment of the current Union Pacific right-of-way bordering the west side of the WSA. However, wilderness designation in itself is not the only restricting factor since the topography of the area is also limiting. Impacts are not significant.

South Pahroc Range

28,600 acres suitable
0 acres unsuitable

Wilderness: The effects of this alternative are virtually the same as for the Preferred Alternative.

Recreation: The effects of this alternative are virtually the same as for the Preferred Alternative.

Energy and Minerals Resources: Locatable Minerals - Under this alternative the 500 acre area with favorable (Class 2) mineral potential associated with the currently producing Paramount Perlite Mine would be withdrawn from mining claim location--the mapped perlite bodies actually lie outside the WSA and are not included. The 138 acre area covered with a mining claim in the northeast corner of this WSA would be included in this alternative. There would not be a significant impact, as strategic or critical and import reliance minerals are not known to exist in any of the claim areas. The 639 acre area with inferred favorable (Class 3) mineral potential and the remaining 27,323 acre area with unqualified (Class 5) mineral potential would be withdrawn from mining claim location.

Salable Minerals - Under this alternative the three areas comprising 2,500 acres with favorable (Class 2) mineral potential and the two areas comprising 26,100 acres with inferred (Class 3) mineral potential would be withdrawn from common variety mineral material disposals.

Leasable Minerals - Oil and gas leases cover 2,530 acres of the WSA and in this alternative. Under this alternative the 28,600 acre area with unqualified (Class 4) oil and gas mineral potential and unfavorable or unknown (Class 5) other leasable mineral potential would be subject to one of the two outcomes as described in General Impacts.

Conclusions - Strategic or critical mineral materials and minerals with a greater than 50 percent import reliance are not known or inferred to occur. Using the classification from Chapter 3 (Fig 3-2) and the rationale for determining the threshold level of significant impact described earlier (Fig 4-1) there is no significant impact.

Wildlife: The effects of this alternative are virtually the same as for the Preferred Alternative except that a small additional area of habitat would receive greater protection.

No Wilderness Alternative

0 acres suitable
588,423 acres nonsuitable

Clover Mountains (Grapevine)

0 acres suitable
84,935 acres nonsuitable

Wilderness: Some seismic exploration work would probably occur but would be limited due to the terrain. Exploratory wells and even production wells may be drilled if, against long odds, producible hydrocarbons are discovered. Exploration activity for metallic minerals may occur, particularly adjacent to the Pennsylvania and Viola mining districts. Pits, trenches and roads would result. ORV use in Cottonwood Canyon and the southern extremity of the WSA would occur.

Habitat improvement for mule deer may result in portions of 13,440 acres of the southeast portion of the WSA being burned to remove pinyon-juniper stands. Road construction would increase access for big game hunting, camping, ORV use and non-commercial harvest of forest products.

The result of this alternative would be the serious compromising or total destruction of the outstanding wilderness resource over large portions of this WSA, over the long term. Substantial areas of wilderness values would remain, however, this would be a significant adverse impact.

Recreation: A gradual erosion of outstanding primitive recreation opportunities will occur as some 20 miles or so of roads are constructed in the region. Those roads will probably be constructed to mining claims on the northwest up Cottonwood Canyon to reach barite prospects and the area of the old Houston International Claims, and into the western 1/3 of the WSA for alunite prospecting. Dayhiking and backpacking will be less enjoyable and more difficult due to increased roading. Mule deer hunting opportunities would increase along with opening of access and large-scale habitat manipulation. Motorized recreation activities such as sightseeing and ORV uses will increase. Since primitive recreation opportunities are limited and ORV opportunities are not, the result will be a negative impact on recreation. Increased mule deer hunting would be a slight beneficial effect.

Energy and Minerals Resources: Under this alternative the 84,935 acre area would remain open to operations under the mining laws, the Leasing Act and the Material Sales Act without wilderness constraint. There is no impact.

Wildlife: Potential increased access and activity could increase exposure of wildlife to trappers, hunters, ranchers, woodcutters, and sightseers. Increased mule deer numbers resulting from major habitat manipulation would be a beneficial impact.

Delamar Mountains

0 acres suitable
126,257 acres nonsuitable

Impacts are the same as for the Preferred Alternative.

Meadow Valley Range

0 acres suitable

185,744 acres unsuitable

Wilderness: This alternative would result in the loss of an area, which by its size and naturalness, is representative of the west encountered by the pioneers. Casual mineral exploration, project construction, and use would result in a gradual erosion of naturalness and solitude in many portions of the WSA. High wilderness values in some portions of the Meadow Valley Mountains would be lost. Most activity would occur in the southern 1/4 of the WSA, near Avertt Reservoir and south of Hackberry Canyon near Meadow Valley Wash. Also lost would be moderate to outstanding wilderness values in the Bunker Hills. Over the long term, major portions of the unit would lose wilderness values, although wilderness values would also remain in large areas. The adverse impact would be significant.

Recreation: Some loss of primitive recreation opportunities within one hour's drive of Las Vegas would occur. Access for bird and deer hunting by vehicle would increase as roads are constructed. ORV use opportunities would increase with organized events likely in washes such as Farrier and Wildcat. Casual use would increase in the Vigo Canyon and with developed access in the central bajada regions. Impacts would be adverse for primitive recreation resources and beneficial for bird hunters and ORV users.

Mormon Mountains

0 acres suitable
162,887 acres nonsuitable

Wilderness: This alternative would result in the core region and Moapa Peak Area remaining intact as de facto wilderness because of the combination of extremely rough terrain and lack of any enticement for someone to construct an expensive road.

Avocational mining exploration, particularly in the southern, western and northern sections will probably continue. Cherrystem roads will provide access for vehicle camping. Further road construction and installation of range and wildlife projects without regard to their effect on wilderness values will cause erosion of wilderness values..

Installation of communications facilities at the peaks would damage wilderness values at and near the peaks. The previously described activities in the uplands surrounding the central core will cause an incremental loss of moderate to outstanding wilderness values over the long term over 40 to 50 percent of the area. This effect will be concentrated more in the southerly half. In the remaining, mostly bajada regions, low to moderate wilderness values will be lost to mining, ORV use and project construction most of which will occur in the south, southwest, southeast and to a lesser degree, east sides.

With the exception of outside sights and sounds intruding somewhat, and communication sites on the peaks, the central core will retain most of its wilderness values for the long term. These values are discussed in detail in the Preferred Alternative analysis. The loss of moderate and outstanding wilderness values in fairly extensive portions of the area surrounding the central core is a significant adverse impact.

Recreation: Much roadless area would remain in the core area, thus preserving dayhiking and backpacking opportunities. Influences from vehicle use would depreciate the primitive character of these experiences, in the more accessible regions. With developing better road access, caving opportunities would remain, but may be substantially depreciated in quality as vandalism increases. An adverse impact would occur to some primitive and undeveloped types of recreational activities. Growing access for ORVs will open up new areas for vehicle camping, rock hounding, hobby mining, hunting, trapping and sightseeing. This is a beneficial impact for this type of recreational use.

Wildlife: Intrusions caused by increased vehicle use may adversely affect deer, bighorn sheep, raptors, quail and desert tortoise. Many impacts could be mitigated and/or resolved through other land use regulations and policies.

South Pahroc Range

0 acres suitable
28,600 acres nonsuitable

Wilderness: Whether or not development would occur in this area is difficult to predict since there are no known attractions in terms of competing resource values present. No adverse impacts are likely to occur. Beneficial impacts are described in the Preferred Alternative.

Recreation: Vehicle camping and use would increase in the mouths of canyons on the north and west end. Since there are no other known resources other than potential perlite present to attract development, primitive recreation uses will remain essentially unchanged and effects would be insignificant.

Wildlife: Since there are no other known resources present other than potential perlite, development is unlikely. Activity on the perlite claims could reduce some bighorn sheep habitat and slightly alter their migration patterns if they are reintroduced. This effect is negligible though because of the limited area involved. Adverse effects are unlikely.

Resource Development Alternative

168,154 acres suitable
420,269 acres nonsuitable

Clover Mountains

53,090 acres suitable
31,845 acres nonsuitable

Wilderness: This alternative would designate 53,090 acres as wilderness located in the core area of the WSA, and includes the major portion of the area's outstanding wilderness resources. The nonsuitable portion lies along the western, extreme southern and southeastern borders. Wilderness values in the nonsuitable portion range from low to outstanding.

Designation would incorporate lands ranging downwards from 7300' to near 3000' and which encompass several interesting and varied vegetation zones. At the upper end of the Cottonwood Creek drainage are pinyon-juniper woodlands interspersed with ponderosa pine groves, with willow ash; gambel oak and cottonwood farther down. In the lower reaches are desert shrubs, chollas as tall as 8 feet, yuccas and prickly pears.

The presence of the rare commodity of live water the 14 mile reach of Pine and Cottonwood Creeks is a major enhancement to the visitor. Other ephemeral creeks ranging in length from 4.5 to nearly 7 miles enter this main drainage from the sides. Preserved in the northern portion would be rugged peaks leading to deep twisting canyons, brightly-hued cliffs and narrow rock walls in the central portion. Excellent dayhiking opportunities into the upper end of Pine Creek and into the lower end of Cottonwood Creek exist. Challenging cross-country hikes and camping for up to one week are available using Pine and Cottonwood drainages.

The western boundary lies on the ridgeline and excludes an area of barite occurrence which extends into the Cottonwood drainage. On the south the last mile of Cottonwood Creek is nonsuitable. The area of the old Houston International claims is nonsuitable and lies within the Cottonwood drainage for the most part. The southeastern boundary is defined mainly by the drainage divides between Cottonwood Creek and the Tule Desert and Sheep Flat drainages, respectively.

Good topographic and vegetative screening prodeuce excellent soliltude within the canyon itself. However, with the boundary located on the divides and in some cases, within the canyon, activity such as mining exploration or development would intrude somewhat on solitude and naturalness in the vicinity of such activity.

Occasional ORV use occurs up Cottonwood Creek but would not be a management problem as it could be readily controlled near the canyon mouth or at the railroad crossing. Mining activity on the nonsuitable areas within the canyon could cause manageability problems if access were required through the wilderness area. Such access would have to come up through Cottonwood Canyon and severely compromise wilderness values on the lower end of the canyon.

The nonsuitable area includes moderate to outstanding wilderness values along the west side, low wilderness values on the south end, outstanding wilderness values on the Houston International claims, moderate to outstanding wilderness values in the southeastern area and outstanding wilderness values in the Quaking Aspen Spring region.

Little would occur to affect wilderness values along the west side nonsuitable lands. Some ORV use may occur on the southern area but would not be significant. Although the Houston International claims were dropped, some subsequent activity there would adversely affect naturalness and probably damage the wilderness resource in that area.

Visitation will increase with designation and may depreciate wilderness values in popular camping spots, without some management of the area. This increase is expected to be in the moderate (50-300 visitor days) range.

Designation would protect the Cottonwood Canyon region and most of its side drainages from negative impacts emanating from mineral exploration or extraction activities and access road construction. Significant beneficial impacts would occur in the suitable region. Wilderness values may be lost in small portions of the nonsuitable area.

Recreation: Primitive recreation opportunities which are outstanding would be preserved in the suitable area including, Cottonwood Canyon, Stokes Flat, and Fife Canyon. These opportunities would be somewhat compromised in the vicinity of the barite occurrence and the Old Houston International Claims should activities take place there. Excellent dayhiking and backpacking opportunities could be degraded or lost in the vicinity of Quaking Aspen Spring if developments occurred there. Significant areas of outstanding primitive recreation resources would be protected in the suitable area. Some primitive recreation values would be lost in the nonsuitable area, resulting in a mixture of adverse and beneficial impacts.

Energy and Minerals Resources: Locatable Minerals - This WSA was determined to have the greatest potential as an exploration target for metallic minerals in the GEM Great Basin WSA Study Region (Great Basin Joint Ventures, 1983) due to the proximity of adjacent mining districts and general lack of information. Under this alternative, the 1,650 acre area with unqualified (Class 4) mineral potential and the 51,440 acre area with unfavorable or unknown (Class 5) mineral potential would be withdrawn from mining claim location. This alternative excludes all mining claims of record within the WSA adjacent to the Pennsylvania Mining District (870 acres) and the large block of claims (1,470 acres) held by Houston International in the south central portion of the WSA that were abandoned (Great Basin Joint Ventures, 1983).

Salable Minerals - Under this alternative the 5,700 acre area with favorable (Class 2) mineral potential and the 47,390 acre area with inferred favorable (Class 3) mineral potential would be withdrawn from common variety mineral material disposals.

Leasable Minerals - The entire WSA is covered by oil and gas leases, with 53,090 acres leased in this alternative. Under this alternative, the 53,090 acre area with unqualified (Class 4) oil, gas, and alunite mineral potential and unfavorable or unknown (Class 5) other leasable mineral potential would be subject to one of the two outcomes as described in General Impacts.

Conclusion - Strategic or critical mineral materials and minerals with a greater than 50 percent import reliance are not known to occur in significant amounts. Therefore, using the classification of Chapter 3 (Fig. 3-2) and the rationale for determining the threshold level of significant impact described earlier (Fig. 4-1), there is no significant impact.

Wildlife: This alternative would permit easier habitat manipulation for mule deer winter range and thus contribute to increasing the quality of habitat. Access developed for other purposes may increase the exposure of wildlife to trappers, hunters, ranchers, woodcutters and sightseers. This would permit legal and illegal harvest and deleteriously affect sensitive species such as the Federally protected peregrine and expose golden eagles to shooting or other harassment. This impact would be moderately beneficial for hunting and potentially significantly adverse for other wildlife.

Delamar Mountains

48,164 acres suitable
78,093 acres nonsuitable

Wilderness: This alternative would designate 48,164 acres as wilderness. Included are most of the area's moderate to outstanding wilderness values. The canyon on the northwest side with its solitude and hiking potential is in the suitable area. Most of the central mountainous region with moderate to outstanding wilderness values including solitude, and hiking or scrambling opportunities is in the suitable area. The boundary cuts across the southern region with its mesas and canyons, leaving some portions in and some out of the suitable area. This alternative includes wilderness values ranging from low to outstanding and primitive recreation values ranging from low to moderate.

The nonsuitable area includes the low to moderate wilderness and primitive recreation values of the western bajada and western slopes of the central mountains. On the southern end, the mesa tops have low to moderate wilderness values while the canyons have moderate to outstanding values. On the southeastern and eastern side, wilderness values are low. On the northern end, extending south along the Pony Well road, wilderness values are predominantly low, with some aras of moderate values.

Occasional ORV use, probably associated with hunting, is occurring in Bomber Wash. This could probably be controlled, but would not seriously jeopardize wilderness values even if it were not. This is due to the fact that only the active wash can be driven. Due to precipitous terrain or lack of access through precipitous terrain, the rest of the suitable area can be readily managed as wilderness for the long term.

In the nonsuitable area, activities incompatible with wilderness values will likely occur on the bajadas of the western, southern and southeastern portions of the WSA, and in proximity to the Pony Well cherrystem road. These activities will consist of material sites, power line construction, range projects consisting primarily of water development and commercial and recreational ORV use. These activities will cause the loss of low, moderate and small areas of outstanding wilderness values on the southern end and low wilderness values on the west side. Some areas of low wilderness values would be lost along sections of the Pony Well road.

Impacts would be slightly negative in that some areas of outstanding wilderness values would be lost, but these are not extensive nor highly attractive. A positive benefit would accrue to the extent that moderate and outstanding wilderness values are included in the suitable area.

Recreation: The primitive recreation opportunities in most of the central mountainous area would be preserved. Horseback riding opportunities possible only out of the Gregerson Basin area, would take place in a less wilderness environment if access roads are developed. ORV use could be permitted in washes and bajada areas along the western, southern and southeastern fringes and along the Pony Well road, unless other resource considerations, such as desert tortoise management precluded it. Minor adverse recreation impacts would occur, in that some primitive recreation opportunities may be lost in the nonsuitable portion. Preservation of primitive recreation opportunities in the suitable portion and of ORV use in the nonsuitable portion is beneficial.

Energy and Minerals Resources: Locatable Minerals - Under this alternative eight small areas comprising 362 acres with inferred (Class 3) mineral potential would be withdrawn from mining claim location. The remaining three areas comprising 47,802 acres with unqualified (Class 4) mineral potential would be withdrawn from mining claim location.

Salable Minerals - Under this alternative the two areas comprising 2,123 acres with very favorable (Class 1) mineral potential for sand and gravel resources would be excluded. The four small areas comprising 519 acres with favorable (Class 2) mineral potential and the remaining 48,164 acre area with inferred favorable (Class 3) mineral potential would be withdrawn from common variety mineral material disposals.

Leasable Minerals - The entire area of this alternative is covered by oil and gas leases. Under this alternative the 362 acre area with unqualified (Class 4) mineral potential for phosphate rock is excluded. The 47,802 acre area with unqualified (Class 4) oil and gas mineral potential, and unfavorable or unknown (Class 5) other leasable mineral potential would be subject to one of the two outcomes as described in General Impacts.

Conclusions - Strategic or critical mineral materials and minerals with a greater than 50 percent import reliance are not known or inferred to occur. Using the classification from Chapter 3 (Fig. 3-2) and the rationale for determining the threshold level of significant impact described earlier (Fig. 4-1), there is no significant impact.

Wildlife: This alternative protects minor portions of the Resource Area's mule deer yearlong and bighorn yearlong habitat. Habitat for nongame species such as golden eagles, prairie falcons and other raptors, and possibly, the spotted bat (rare in the State) would be protected. All quail guzzlers remain outside the boundary of this alternative. This alternative provides minor wildlife benefits.

Meadow Valley Range

17,165 acres suitable
168,579 acres nonsuitable

Wilderness: This alternative preserves one of the areas having moderate to outstanding wilderness values in the unit. Centered on Hackberry Canyon, it derives its attributes from topographic relief and interesting and colorful cliffs, naturalness and solitude. If it is roughly triangular in shape and approximately 5 miles wide at the wider portion with designation, some ORV use would continue up the wash bottom, but would not be significant. Use of the Hackberry Spring vicinity by bird hunters and the allottee, who has a corral and associated facilities there, would constitute a depreciation of wilderness values in that area. The suitable area could be managed as wilderness over the long term with only minor management attention.

The nonsuitable area possesses wilderness values ranging from low to outstanding. The rugged escarpment of the Meadow Valley Range stretches approximately 34 miles and has outstanding wilderness values. Solitude and naturalness are readily obtainable over most of the range. Moderate wilderness values exist in the Bunker Hills and moderate to low wilderness values exist in the central bajada region. In the Vigo Canyon drainage, wilderness values are low and numerous ways are present.

In the nonsuitable area, ORV use on the southeastern end and in the Vigo Canyon drainage will continue and remaining low wilderness values would be lost. Mining exploration may occur in the Bunker Hills as in the past, near Avertt Reservoir and south of Hackberry Canyon with a consequent depreciation of wilderness values in the respective vicinities.

The central bajada, an area of approximately 53 sections has mainly moderate wilderness values. Except for an occasional exploration trail or casual use, this area will likely remain undisturbed and thus its wilderness value will remain intact.

Beneficial impacts occur with the preservation of outstanding wilderness values in the suitable portion. Loss of some areas containing low to outstanding wilderness values will occur in the nonsuitable area, thus creating an adverse impact. On balance, the impact is negative.

Recreation: This alternative preserves the core portion of one of the unit's best areas of primitive recreation opportunity, Hackberry Canyon. It also preserves the opportunity to expand ORV use of large areas as well as hunting access. Competitive ORV events will likely occur in the southern washes.

Access to Hackberry Spring by vehicle for hunting would be precluded. Some loss of bighorn sheep habitat due to human intrusion may affect hunting opportunities for this species. Large areas of primitive recreation opportunity would be gradually lost as road building occurs. Impacts to primitive recreation opportunities would be significant.

Energy and Minerals Resources: Locatable Minerals - Under this alternative, the predominating 17,165 acre area with unfavorable or unknown (Class 5) mineral potential would be withdrawn from mining claim location. All areas with mining claims and areas with mineral potential of inferred favorable (Class 3) or greater, are eliminated in this alternative.

Salable Minerals - Under this alternative a 200 acre area with favorable (Class 2) mineral potential and the predominating 16,965 acre area with inferred favorable (Class 3) mineral potential would be withdrawn from common variety mineral material disposal.

Leasable Minerals - The entire area of this alternative is covered by oil and gas leases. The 17,165 acre area with unqualified (Class 4) oil and gas mineral potential and unfavorable or unknown (Class 5) other leasable mineral potential would be subject to one of the two outcomes described in General Impacts.

Conclusions - This alternative excludes all areas with mining claims and areas with favorable mineral potential. Strategic and critical mineral materials and minerals with a greater than 50 percent import reliance are not known or inferred to occur. Using the classification of Chapter 3 (Fig. 3-2) and the rationale for determining the threshold level of significant impact described earlier (Fig. 4-1), there is no significant impact.

Wildlife: This alternative protects fractional portions of the Resource Area's wildlife habitat, as follows: mule deer yearlong 1.3%, quail crucial, 0.2%, bighorn yearlong 5.8%; bighorn summer crucial, 5.2%. Some habitat for nongame species such as golden eagles and other raptors and possibly, the spotted bat (State rare) would be protected. The difficulty of installing and maintaining guzzlers would be increased by limiting access to foot or horseback and proscribing motorized equipment. This alternative provides slight wildlife benefits.

Livestock Grazing: Effects are very limited.

Mormon Mountains

23,960 acres suitable
138,927 acres nonsuitable

The impacts are the same as the Preferred Alternative.

South Pahroc Range

25,775 acres suitable
2,825 acres nonsuitable

Wilderness: Impacts are the same as for the All Wilderness Alternative except that some wilderness values may be lost due to outside sights and sounds from mine development on the eastern escarpment. Rehabilitation would be difficult due to the rockiness and steep ground. Current operations in the adjacent mine are mostly underground, however.

Recreation: Impacts are the same as for the All Wilderness Alternative except that some recreation values may be lost in the two areas of perlite potential.

Energy and Minerals Resources: Locatable Minerals - Under this alternative most of the 500 acre area with favorable (Class 2) mineral potential associated with the currently producing Paramount Perlite Mine would be excluded -- the mapped perlite bodies within portions of the area with favorable potential actually lie outside the WSA. The mining claim that overlaps onto the northeast corner of the WSA is also excluded. The two areas comprising 639 acres with inferred favorable (Class 3) mineral potential along the remaining east flank of the range and the 25.136 acre area with unqualified (Class 4) and unfavorable or unknown (Class 5) mineral potential would be withdrawn from mining claim location.

Salable Minerals - Under this alternative the three areas comprising 1,368 acres with favorable (Class 2) mineral potential and the two areas comprising 2,441 acres with inferred favorable (Class 3) mineral potential would be withdrawn from common variety mineral material disposals.

Leasable Minerals - Oil and gas leases cover 2,530 acres of the WSA and 2,530 acres in this alternative. Under this alternative the 25,775 acre area with unqualified (Class 4) oil and gas mineral potential and unfavorable or unknown (Class 5) other leasable mineral potential would be subject to one of the two outcomes as described in General Impacts.

Conclusions - This alternative excludes an area with a mining claim and most of the area with favorable mineral potential. Strategic or critical mineral materials and minerals with a greater than 50 percent import reliance are not known or inferred to occur. Using the classification from Chapter 3 (Fig. 3-2) and the rationale for determining the threshold level of significant impact described earlier (Fig. 4-1) there is no significant impact.

Wildlife: The impacts are virtually the same as the All Wilderness Alternative except that mining on the two areas of perlite potential could damage a small amount of deer and bighorn sheep habitat.

Livestock Grazing: Impacts are the same as for the All Wilderness Alternative.

Wilderness Accent

506,740 acres suitable
82,768 acres nonsuitable

Clover Mountains

86,020 acres suitable
0 acres nonsuitable

Wilderness: The effects of this alternative are similar to the effects of the All Wilderness Alternative except that this alternative moves the wilderness boundary westward to the ridgeline in the northwest portion of the WSA. This will result in greater opportunity to exclude outside sights and sounds, and incompatible mineral exploration activity should activities increase or spread from the Pennsylvania Mining District.

Manageability of wilderness values in the area of the claims could be difficult over the short term if activity on these mining claims on the northwest side was substantial. Significant beneficial impacts would accrue.

Recreation: The effects of this alternative are the same as for the All Wilderness Alternative except that primitive recreation opportunities would be better preserved along the northwest boundary. Mining activity on the northwest and southern end could adversely affect primitive recreation values should valuable discoveries are made on claims in these areas.

Energy and Minerals Resources: Locatable Minerals - Under this alternative the 90 acre area of favorable (Class 2) mineral potential adjacent to the Pennsylvania mining district and two areas comprising 2,465 acres with unqualified (Class 4) mineral potential adjacent to the Pennsylvania and Viola (Cherokee) mining districts would be withdrawn from mining claim location. Roughly half of the 90 acre favorable area for the strategic and critical minerals copper and silver is not covered by mining claims and withdrawal of this portion from mining claim location would have a significant affect on potential development of this resource if it profitably exists. Also withdrawn will be three areas comprising 1,430 acres with inferred favorable (Class 3) mineral potential and the remaining 82,035 acre area with unfavorable or unknown (Class 5) mineral potential. The 770 acre area under mining claims near the Pennsylvania mining district would be included in this alternative. There would not be a significant impact, as no strategic or critical minerals are known to exist in significant amounts.

Salable Minerals - Under this

alternative the 7,205 acre area of favorable (Class 2) mineral potential and the 78,815 acre area of inferred favorable (Class 3) mineral potential would be withdrawn.

Leasable Minerals - Oil and gas leases cover the entire area in this alternative. Under this alternative, the 86,020 acre area with unqualified (Class 4) and unfavorable or unknown (Class 5) mineral potential would be subject to one of the two outcomes as described in general impacts.

Conclusion - Strategic or critical mineral materials and minerals with a greater than 50 percent import reliance are not known to occur in significant amounts. Approximately 90 acres of an area identified as having favorable mineral potential for containing strategic or critical mineral resources not known in significant amounts would be significantly affected by withdrawal, but using the classification of Chapter 3 (Fig. 3-2) and the rationale for determining the threshold level of significant impact described earlier (Fig.4-1), there is no significant impact to the remaining areas in this alternative.

Wildlife: The impacts are essentially the same as for the All Wilderness Alternative.

Livestock Grazing: The impacts are the same as for the Preferred Alternative.

Lands: The impacts are the same as those for the Preferred Alternative.

Delamar Mountains

102,490 acres suitable
23,767 acres nonsuitable

Wilderness: The impact and manageability factors of this alternative are the same as for the All Wilderness Alternative with the exception that peripheral bajadas areas with low wilderness values and manageability problems have been recommended as nonsuitable.

Recreation: All of the primitive recreation opportunities would be preserved. The only areas left out are those with low values on the western, southern, and southeastern fringes. Beneficial impacts would result, though they are not outstanding.

Energy and Minerals Resources: Locatable Minerals - Under this alternative the three areas comprising 15,834 acres with inferred (Class 3) mineral potential would be withdrawn from mining claim location. The remaining two areas comprising 86,656 acres with unqualified (Class 4) mineral potential and the 102,490 acre area with unfavorable or unknown (Class 5) mineral potential would be withdrawn from mining claim location.

Salable Minerals - Under this alternative the two areas comprising 2,123 acres with very favorable (Class 1) mineral potential for sand and gravel resources would be excluded. The 10 small areas comprising 18,422 acres with favorable (Class 2) mineral potential and the remaining 84,068 acre area with inferred favorable (Class 3) mineral potential would be withdrawn from common variety mineral material disposals.

Leasable Minerals - The entire area of this alternative is covered by oil and gas leases. Under this alternative the 102,490 acre area with unqualified (Class 4) oil and gas mineral potential, the 324 acre area with unqualified (Class 4) phosphate rock potential and the 102,148 acre area with unfavorable or unknown (Class 5) other leasable mineral potential would be subject to one of the two outcomes described in General Impacts.

Conclusion - Strategic or critical mineral materials and minerals with a greater than 50 percent import reliance are not known or inferred to occur. Using the classification from Chapter 3 (Fig. 3-2) and the rationale for determining the threshold level of significant impact described earlier (Fig. 4-1), there is no significant impact.

Wildlife: Minor protection is afforded to the Resource Area's wildlife habitat as follows: deer yearlong 6.5%, bighorn yearlong 13.4%, tortoise crucial 1.8%. Raptors, quail and other species would gain some habitat protection. Some desert tortoise crucial habitat is included in this alternative. Several square miles of tortoise habitat on the south and west are in the nonsuitable area. Several quail guzzlers on the eastern edge are inside the boundaries of the suitable area and consequently would be a little more difficult to maintain. This alternative offers minor benefits to most species, but significant benefits to desert tortoise because it is a sensitive species.

Livestock Grazing: The impacts are the same as for the All Wilderness Alternative except the proposed fence project would be outside the suitable area.

Meadow Valley Range

166,500 acres suitable
19,244 acres unsuitable

Wilderness: The impacts are the same as for the All Wilderness Alternative except that some wilderness values are lost on the northeast side at Vigo Canyon. However, since this is an area accessible to ORVs and crossed by several ways, it would be very difficult to manage as Wilderness for the long term. The best wilderness values are preserved. Significant beneficial impacts would result.

Recreation: The impacts are the same as for the All Wilderness Alternative except that ORV uses could continue in the unsuitable portion of the Vigo Canyon region. Beneficial impacts would result.

Energy and Minerals Resources: Locatable Minerals - Under this alternative the 166 acre area with favorable (Class 2) mineral potential in the north part of the WSA with estimated large reserves of perlite would be withdrawn from mining claim location and designation would affect potential development of that resource. The five areas comprising 60,500 acres with inferred favorable (Class 3) mineral potential, the five areas comprising 4,550 acres with unqualified (Class 4) mineral potential and the seven areas comprising 101,284 acres with unfavorable or unknown (Class 5) mineral potential would be withdrawn from mining claim location. The area along the central northwest WSA boundary and in the southeast corner of the WSA contain mining claims that are included in this alternative. There would not be a significant impact, as strategic or critical minerals and import reliance minerals are not known to exist in any of the claim areas.

Salable Minerals - Under this alternative the six areas comprising 49,784 acres with favorable (Class 2) mineral potential and the remaining 116,716 acre area with inferred favorable (Class 3) mineral potential would be withdrawn from common variety mineral material disposals.

Leasable Minerals - The 166,500 acre area with unqualified (Class 4) oil and gas mineral potential including 1,000 acres with unqualified (Class 4) phosphate rock mineral potential and unfavorable or unknown (Class 5) other leasable mineral potential would be subject to one of the two outcomes described in General Impacts.

Conclusion - Strategic or critical mineral materials or minerals with a greater than 50 percent import reliance are not known or inferred to occur. Using the classification of Chapter 3 (Fig. 3-2) and the rationale for determining the threshold level of significant impact described earlier (Fig. 4-1), there is no significant impact.

Wildlife: The impacts are the same as for the All Wilderness Alternative with the following differences: This alternative protects fractional to substantial portions of the Resource Area's wildlife habitat, as follows: mule deer yearlong, 2.3%; quail crucial, 0%; bighorn yearlong, 30%; and bighorn crucial summer, 29%.

Livestock Grazing: The impacts are the same as for the All Wilderness Alternative with two exceptions. Two of the five proposed reservoirs and approximately half of the proposed fences would be excluded from the suitable boundary recommendation. The suitable area contains three reservoirs, two springs with 2.5 miles of pipeline and 3 to 5 miles of fence. These projects are proposed to reduce livestock concentration at existing water sources. Since their purpose is to protect the resource, they would meet Wilderness Management Policy criteria and have to be constructed in a non-impairing manner. Impacts are not significant.

Lands: The impacts are the same as for the All Wilderness Alternative.

Mormon Mountains

123,130 acres suitable
39,757 acres nonsuitable

Wilderness: Impacts are the same as for the All Wilderness Alternative except for two variations. Manageability problems are removed on the southwestern and eastern bajadas as well as a substantial amount of cherrystem road influence. This will remove a major source of difficulty in managing wilderness values in the face of ORV control and mining claim development on the lower portion of the southwestern bajada. A portion of the large area cherrystemmed because mining prospects on the west side of the unit has been reduced in size because the terrain becomes steep and mining influence is substantially unnoticeable. Further development of a commercial resource there seems unlikely.

Some manageability problems due to ORV use south of the Whitmore Mine may occur, but these are estimated to remain within tolerable limits. Water developments to serve bighorn sheep needs may cause some local temporary effects on wilderness values, but with careful design and installation methods would rapidly achieve compatibility with the area's wilderness character. The increased opportunity for visitors to observe wild sheep would be more than offsetting.

Recreation: The impacts are the same as for the All Wilderness Alternative.

Energy and Minerals Resources: Locatable Minerals - Under this alternative the 25 acre area with favorable (Class 2) mineral potential for copper around the old Whitmore gold prospect in the south central portion of the WSA would be withdrawn from mining claim location. The prospect itself is excluded by the cherrystemmed road to the abandoned workings, but the remaining area is not covered by mining claims and withdrawal would significantly affect potential development of the resource if it were to profitably exist. The predominating 80,330 acre area with inferred favorable (Class 3) mineral potential, the 17 areas comprising 14,400 acres with unqualified (Class 4) mineral potential and the remaining 28,400 acre area with unfavorable or unknown (Class 5) mineral potential would be withdrawn from mining claim location. Five of the 17 areas with unqualified potential contain mining claims that would be included in this alternative. There would not be a significant impact, as strategic and critical minerals and import reliance minerals are not known to exist in any of the claim areas.

Salable Minerals - Under this alternative the 36,130 acre area with favorable (Class 2) mineral potential and the 87,000 acre area with inferred favorable (Class 3) mineral potential would be withdrawn from common variety mineral material disposal.

Leasable Minerals - The entire WSA is covered by oil and gas leases, with 123,130 acres leased in this alternative. The 123,130 acre area with unqualifed (Class 4) oil and gas mineral potential and unfavorable or unknown other leasable mineral potential would be subject to one of the two outcomes described in General Impacts.

Conclusions - Strategic and critical mineral materials and minerals with a greater than 50 percent import reliance are not known to occur in significant amounts. Approximately 25 acres of an area identified as having favorable mineral potential for containing strategic or critical and import reliance mineral resources not known in significant amounts would be significantly affected by withdrawal, but using the classification of Chapter 3 (Fig. 3-2) and the rationale for determining the threshold level of significant impact described earlier (Fig. 4-1), there is no significant impact to the remaining areas in this alternative.

Wildlife: The impacts are the same as for the All Wilderness Alternative.

Lands: The impacts are the same as for the All Wilderness Alternative.

South Pahroc Range

28,600 acres suitable
0 acres unsuitable

Wilderness: The impacts are the same as for the All Wilderness Alternative.

Recreation: The impacts are the same as for the All Wilderness Alternative.

Energy and Mineral Resources: The impacts are the same as for the All Wilderness Alternative.

Wildlife: The impacts are the same as for the All Wilderness Alternative.

Livestock Grazing: The impacts are the same as the All Wilderness Alternative.

CHAPTER 5

CONSULTATION AND COORDINATION

CHAPTER FIVE

PUBLIC PARTICIPATION AND LIST OF PREPARERS CONSULTATION AND COORDINATION

Coordination

Coordination began with the inventory process of the late 1970's wherein roadless areas with the requisite wilderness features where identified. The current phase of the process, the study and EIS phase, began with a Federal Register Notice published in February, 1983. News releases and a mailing to public entities, allotment holders, mining claimants of record, conservation groups, interested individuals and others accompanied the start of this effort. Public workshops and open houses were held in Caliente and Las Vegas. The Nevada State Clearinghouse was briefed. Input derived from all these sources was utilized in developing the issues and the array of alternatives.

A similar mailing list, news releases, Federal Register Notice and public hearings will be used to derive public input from review of this draft EIS.

Consistency With Other Plans

Federal Agencies

The Air Force has generally supported wilderness designations, but desires to continue the use of wilderness areas for the placement by helicopter of portable solar powered electronic training aids.

State Agencies

The Division of Forestry supports designation of possibly one of the WSAs (South Pahroc Range) as wilderness, noting that some prime pinyon-juniper sites exist in some WSAs. The agency prefers that most of these remain in multiple management.

Historic Preservation and archaeology desires that BLM consider whether or not known significant cultural resources or Native American uses in the WSAs are better managed through wilderness designation or through other multiple use emphasis.

State Parks generally supports wilderness designation and cites substantial support for the types of recreation best accommodated in wilderness designation, in the Nevada Statewide Comprehensive Recreation Plan. Additional support is cited from the Governor's Commission on the Future of Nevada.

Water Planning notes that access to developed water sources must be maintained and that several of the WSAs are wholly or partly in designated water basins. The Department of Conservation and Natural Resources provided a draft position paper which actively supports the establishment of wilderness areas in Nevada in accordance with certain basic principles and provided a comprehensive list of these principles to be considered in analyzing wilderness suitability.

Department of Transportation gave conditional support as long as existing transportation corridors, including specifically, realignment of the Kane Springs Road, are not affected.

Environmental Protection noted that WSAs near the power plant site in Dry Lake Valley may sustain significant air quality impacts from SO^2, TSP, and NO^2.

Department of Wildlife expressed concern about the effect of wilderness designation on introduction of elk, if they had not been historically present. Consideration of crucial desert tortoise habitat on the west side of the Delamar Mountains was proposed. Focus on the effects of wilderness designation on threatened or endangered fish species was also counselled.

Bureau of Mines recommends waiting until the results of current and planned mineral studies are complete before drawing boundaries. If time doesn't allow selection of the Resource Development Alternative (based apparently on these study results), then the No Action Alternative is recommended.

County Government

We have determined no conflict with Lincoln County plans.

Lincoln County Conservation District

The district finds that the areas are wilderness, inaccessible to vehicles, little used, will always be wilderness and consequently no reason exists for designation of these areas as wilderness. They, therefore object to designation of any areas as wilderness in the Caliente Resource Area.

Availability of the Draft EIS

The Draft Environmental Impact Statement (DEIS) will be sent to all individuals, agencies and groups who have expressed an interest in the Caliente Wilderness Planning process. Copies of the DEIS will also be sent to local agencies and organizations and will be available for review at public libraries within the region. Copies will also be available at the listed BLM Las Vegas District Office at P.O. Box 26569, Las Vegas, NV 89126, phone (702) 388-6403 or FTS 598-6403.

The following is a partial list of those who will receive copies of the DEIS:

Congressional Delegation, Nevada and Utah

- Senator Chic Hecht, Nevada
- Senator Paul Laxalt, Nevada
- Representative Harry Reid, Nevada
- Representative Barbara Vucanovich, Nevada
- Senator Orrin Hatch, Utah
- Senator Jake Garn, Utah
- Representatiave Dan Marriott, Utah
- Representative Hanse, Utah

Federal Agencies

- Advisory Council on Historic Preservation Department of Agriculture
  - Forest Service
  - Soil Conservation Service
- Department of Commerce
  - National Weather Service
  - National Oceanic and Atmospheric Administration
- Department of Defense
  - Nellis Air Force Base
- Department of Energy
- Department of Interior
  - Bureau of Indian Affairs
  - Bureau of Mines
  - Bureau of Reclamation
  - Fish and Wildlife Service
  - Geological Survey
  - Minerals Management Service
  - National Park Service
- Department of Transportation
  - Environmental Protection Agency
  - Interagency Archaeological Services
- State Agencies
  - Office of the Governor, Nevada
  - Nevada State Planning Coordinator
  - Nevada State Clearinghouse (25 copies)--distributes copies to State agencies
  - Nevada Department of Wildlife
  - State Senators and Assemblymen (Clark and Lincoln Counties)
- Office of the Governor, Utah
- Utah State Planning Coordinator

Local Government

- Lincoln County Commissioners, Nevada
- Iron County Commissioners, Utah
- Washington County Commissioner, Utah
- Lincoln County Conservation District (quasi-governmental)
- Mayor, Caliente, Nevada
- Pioche Town Advisory Board, Nevada
- Panaca Town Advisory Board, Nevada
- Alamo Town Advisory Board, Nevada
- Five County Association of Governments, St. George, Utah
- Clark County Commission
- Clark County Dept. of Comprehensive Planning
- Local Cities

- University of Nevada, Reno and Las Vegas
  - Max C. Fleischmann College of Agriculture
  - Division of Agricultural and Resource Economics
  - Division of Renewable Natural Resources
  - Lincoln County Extension Agent
- Desert Research Institute, Las Vegas and Reno
- Mackay School of Mines
- Nevada Bureau of Mines and Geology
- Bureau of Business and Economic Research, Las Vegas

University of Utah and Utah State University

Others
- Grazing permit holders within the WSAs
- Nevada Power Company
- Pioche Public Utilities
- Southern California Edison
- White Pine Power Project
- Las Vegas District Grazing Advisory Board
- Las Vegas District Multiple Use Advisory Council
- Nevada Cattlemen's Association
- N-5 Grazing Advisory Board, Caliente
- N-5 Unit of Nevada Cattlemen's Association
- Audubon Society, Red Rock Chapter
- Desert Bighorn Council
- Desert Tortoise Council
- Fraternity of Desert Bighorn
- Earth First
- Friends of Nevada Wilderness
- Natural Resources Defense Council
- Nevada Outdoor Recreation Association
- Nevada Wilderness Association
- Nevada Wildlife Federation
- Northern Nevada Native Plant Society
- The Wilderness Society
- Mining Claimants in WSAs
- American Mining Congress
- Nevada Mining & Prospectors Assoc.
- Nevada Mining Council
- ORV Groups

Public Libraries

Boulder City Library
539 California Street
Boulder City, Nevada

Cedar City Public LIbrary
136 W. Center
Cedar City, Utah 84720

Charleston Heights Library
800 Brush St.
Las Vegas Nevada 89107

Clark County Community College
Learning Resource Center
3200 E. Cheyenne Ave.
North Las Vegas, Nevada 89030

Clark County Library
1401 E. Flamingo Road
Las Vegas, Nevada 89109

Henderson Library
Henderson, Nevada 89015

Lincoln County Library
Box 428
Pioche, Nevada 89043

Lincoln County Library
Caliente Branch
Box 306
Caliente, Nevada 89008

Las Vegas Public Library
1726 E. Charleston Boulevard
Las Vegas, Nevada 89104

North Las Vegas Library
2300 Civic Center Dr.
North Las Vegas, Nevada 89030

St. George Public Library
55 West Tabernacle
St. George, Utah 84770

University of Nevada, Reno0
Getchell Library
Gov't Publications DFept.
Reno, Nevada 89507

University of Nevada, Las Vegas
Library
4505 Maryland Parkway
Las Vegas, Nevada 89154

Washoe County Library
301 S. Center Street
Reno, Nevada 789505

White Pine County Library
Courthouse Plaza
Ely, Nevada 89301

Bureau of Land Management Offices

Carson City District Office
1050 E. William Street
Carson City, Nevada 89701

Elko District Office
2002 Idaho Street
Elko, Nevada 89801

Ely District Office
Star Route 5, Box 1
Ely, Nevada 89301

Las Vegas District Office
4765 West Vegas Drive
Las Vegas, Nevada 89126

Winnemucca District Office
705 East 4th Street
Winnemucca, Nevada 89445

Arizona Strip District Office
196 East Tabernacle
St. George, Utah 84770

Cedar City District Office
1579 North Main
Cedar City, Utah 84720

Riverside District Office
1695 Spruce Street
Riverside, California 92507

HEARINGS

A public hearing or hearings will be held on the Draft Environmental Impact Statement. Notice for dates, locations, and times for public hearing will be announced in advance to the public news media and in the *Federal Register*.

LIST OF PREPARERS

NAME	ASSIGNMENT	POSITION	EDUCATION	EXPERIENCE
L. Poppy Benson	Non-Wilderness Devel. Scenarios and Tech Reports	SERA Outdoor Rec. Planner	B.S. Recrecreation Resources Mgmt. Univ. of Minn.	Minnesota DNR 1/2 yr. USFS 1 yr. BLM 6 1/2 yrs.
Jake Brierley	Wilderness and Recreation and Technical Reports	CRA Outdoor Recreation	B.A. History Cal. State Univ. Long Beach	USFS 2 yrs. COE 5 yrs. BLM 5 yrs.
Bernadine Burke	Word Processor Operator	Editorial Assistant	Various word processing & computer training	Various Federal 10 years
Diane Colcord	Maps and Graphics	Visual Info Specialist	B.S. Art Education Univ. of Oregon	BLM 16 1/2 yrs.
Edward Guerrero	Wildlife	CRA Wildlife Biologist	B.A. Agriculture N. M. State	BLM 3 1/2 yrs.
Richard Gundry	Minerals	CRA Geologist	B.S. Geophysics, Univ. of CA.	UC Riverside Consultant 2 yrs. Oil Svcs. 1 1/2 BLM 3 yrs.
Lois Kvool	Word Processor Operator and Editing	Editorial Assistant	Air Force Red Cross BLM	1 1/2 yrs. 1 yr. 3 yrs.
Kevin Leary	Soil, Water and Air	Soil Scientist	B.S. Soil Science Oregon State University	BLM 4 yrs.
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APPENDICES

APPENDIX A

Mineral Classification System

ENERGY AND MINERAL RESOURCES

Determination of energy or mineral resource potential for each of the five WSAs involved evaluation of existing and newly acquired data. The existing BLM mineral resource inventory for the Caliente Planning Unit was supplemented with Geology-Energy-Mineral (GEM) Resource Assessment Reports for each WSA. The two assessments utilized published geologic and mineral information. The existing literature is somewhat limited both in quantity and detail for purposes of determining energy and mineral potential in these WSAs--this is largely due to the areas' remoteness and possibly due to a previous lack of interesting mineral potential. The known data was supplemented with limited field-checking and information from unpublished case-files and other records. Individuals and companies with inholdings were also solicited for their input. Additionally, newly acquired geochemical data was collected and is currently being analyzed and interpreted by the USGS for each WSA. A variety of schemes to classify mineral potential were used. The actual classification of mineral potential used in this analysis is discussed later. The geology, energy, and mineral resources and the classification of potential for each WSA is discussed in more detail in the Wilderness Technical Report. As new data becomes available from public input regarding areas of critical mineral potential or other industry or individual data contributions, the classification or confidence level of an area may change. A mineral survey will be conducted by the U.S. Geological Survey/Bureau of Mines for any of the areas that the BLM Director recommends as suitable for wilderness designation. This will bolster the existing data..

The McKelvey system for the classification of mineral potential has traditionally been used in the mineral resource inventory portion of the Bureau Planning Process. This system compares the economic and geologic feasibility of a deposit based on known or inferred relationships. The system relies heavily on known occurrences and does not have an adequate breakdown for potentially undiscovered, but inferred deposits. It does not consider the relative importance of the potential of a particular type of commodity in contrast to those commodities of lesser or greater importance. The ranking scheme adopted for BLM GEM Resource Assessment compares the favorability for occurrence based on various degrees of known or inferred relations and is further qualified (or unqualified) by the level of confidence of the data used in the favorability classification. The GEM system also does not consider the relative importance of the potential of a particular type of commodity in contrast to those commodities of lesser or greater importance. This ranking system tends to rate inferred occurrences highly--regardless of economic, practical, or legal considerations. The classification system used in this EIS analysis involves relative ranking of commodity groups by method of legal acquisition and is based on the potential importance of a possible new deposit as a function of modern usage and domestic scarcity (see Table A-1).

The mineral commodity groups are defined and ranked in descending order of significance in Table A-1, with mineral types in Group 1 having a greater significance than the lower classes. The classification of mineral potential (Table A-2) is a function of these mineral groups and is based on what is known about the size, demand, or importance of a deposit containing a particular mineral group relative to others. In Table A-2, each Class (1-5) is ranked in descending significance and corresponds to a mineral deposit area, with Class 1 areas having a greater significance or mineral potential than the next lower class of area and likewise down the list.

Areas with the greatest potential (1) would contain a significant quantity of minerals from Group 1, 2, and 3 or would contain minerals of any group that are presently mined within the Planning Unit. Areas with the next lower amount of potential (2) would contain occurrences not in great quantities of minerals from Group 1, 2, and 3 and would include Group 4 minerals in insignificant amounts but without demand (this class also includes areas inferred to contain significant amounts of Group 1, 2, and 3 minerals). Areas with the next lower amount of potential (3) are inferred favorable for discovery of group 1, 2, 3, and 4 minerals in unknown amounts. Areas with the next lower amount of potential (4) are areas with unqualified potential pending additional data. Areas with unqualified potential should not be considered as less than the areas with higher potential--much of the area with unqualified potential may be included with the next lower class once significant data is interpreted. The area with lowest potential (5) is considered either unfavorable for the type of mineral deposit or no data is expected that will determine otherwise. The potential classifications should not be viewed as (1) high, (2) moderate, (3) low, (4) unqualified, and (5) none; but, can only be used in the relative sense with one area either having somewhat higher or lower potential than another. In this way potential deposits can be compared with the Nation's importance of need. This avoids comparing potential, hypothetical, or speculative undiscovered resources with other known or undiscovered resources in other parts of the nation or world.

TABLE A-1

EXPLANATION OF MINERAL GROUPS LISTED IN DESCENDING ORDER OF SIGNIFICANCE

Mineral Group Number	Explanation
1. Strategic or Energy-Related -	Those minerals that are stockpiled and listed with strategic and /or critical materials or those minerals if not strategic are energy-related.
2. Import Reliance -	Those minerals produced domestically that are supported with a 50 percent or more import reliance.
3. Major Export -	Those minerals that are Nationally important of which the U.S. is a net exporter.
4. Regional/Local Importance -	Those minerals that are only of regional or local domestic importance.

Source: Bureau of Land Management, Las Vegas District, Caliente Wilderness Team, 1983.

TABLE A-2

CLASSIFICATION OF MINERAL POTENTIAL*

Relative Potential	Explanation
1.	This class includes areas interpreted on the basis of known mineral deposits of A) Group 1,2, & 3 commodities existing in significant quantities and B) Group 1-4 commodities mined in the Planning Unit (includes presently producing areas).
2.	This class includes areas containing known mineral deposits with reserves and/or resources of A) Group 1,2, & 3 commodities not known in significant quantities, B) Group 1-4 commodities known in significant quantities but without significant demand and C) Inferred occurrences of significant amounts of Group 1,2, & 3 Class 1 commodities.
3.	This class includes areas interpreted to be favorable for future discovery of mineral deposits based on evaluation of geologic, geophysical and/or geochemical data (higher confidence than 4).
4.	This class includes areas for which the potential for mineral resources is interpreted on the basis of preliminary evaluation of geologic, mineral occurrence and limited field verification data only. No further analysis has been done.
5.	This class includes areas that could not be classified due to insufficient data and areas where known geology is considered unfavorable for the type of mineral deposit.

* Based on Commodity Significance (Table A-1) and Occurrence Potential.
Source: Bureau of Land Management, Las Vegas District, Caliente Wilderness EIS Team, 1983

Appendix B
Nonwilderness Development Scenarios

CLOVER MOUNTAINS

Future Development Assumptions

1 Oil and Gas and Geothermal

The WSA has speculative potential for oil and gas and low for geothermal. Exploration activities may occur involving seismic lines and exploratory wells. The wells will generally be limited to slopes less than 30 percent. Wells, if drilled at all, would probably number no more than one or two. Each will disturb approximately 10 acres for a drill pad and access.

2. Mineral Development

Exploration activity may occur for metallics and nonmetallics in selected portions of the WSA involving ORV use, some road construction, drilling and test pits. Most of the activity will occur in the northwestern portion near Pennsylvania Canyon, on the west, and on the south end. Although remote, there is a chance either underground or open pit mines will develop in these areas. A remote chance exists for alumite deposits which could be developed on the east side using open pit methods. Small sand and gravel operations would develop along Meadow Valley Wash for use of the railroad, county or local citizens.

3. Communication Sites and Rights-of-Way

No interest has been expressed in new rights-of-way or communication sites. Some slight realignment of the railroad right-of-way may occur. Communication sites are unlikely because Ella Peak is much higher and immediately adjacent to the WSA on the north.

4. Land Disposals

Some land may be patented for minerals, most likely on the northwest side near the Pennsylvania Mining District.

5. Range Improvements

Approximately five to six miles of fence will be constructed running north to south from Coldwater Creek to Horse Springs Canyon.

6. Wildlife Improvements

Approximately 10,000 acres of pinyon-juniper may be burned to improve wildlife habitat in the southeast corner of the WSA. Mudhole Spring and Oil Spring will be fenced. A big game guzzler will be installed on the north end of the WSA.

7. Recreation

Any new roads constructed by mineral and energy companies will open the area to vehicle use. ORV activity, camping, and hunting will increase particularly in Cottonwood Canyon and tributaries.

8. Forest Products

New energy and mineral roads will provide vehicle access to the pinyon-juniper forests. Noncommercial collection of pine nuts, firewood, fence posts and Christmas trees will occur.

DELAMAR MOUNTAINS

Future Development Assumptions

1. Oil and Gas and Geothermal

The WSA has speculative oil and gas potential and low geothermal.

Exploration activities may occur involving seismic lines and exploratory wells. Wells, if drilled, will be located on the east half of the WSA on slopes less than 30 percent and would probably number no more than one or two. Each well disturbs approximately 10 acres for a drill pad and access.

2. Mineral Development

Exploration activities may occur, primarily for nonmetallics. These could occur anywhere in the WSA. This will involve ORV use, some road construction, drilling and test pits. Any mines that develop are most likely to be in the western half of the WSA in the outcrops of Eureka quartzite or perlite. Small sand and gravel operations will develop along highway 93 and the Kane Springs Wash Road.

3. Communication Sites and Rights-of-Way

Communication site development is unlikely because much higher peaks occur in all the surrounding ranges. The powerline corridors on the west boundary of the WSA will probably be expanded to include additional lines.

4. Land Disposals

Some land may be patented for minerals but no other disposals are anticipated.

5. Range Improvements

A two-mile fence along a cherrystem road will be built in the north end of the WSA. A water development would be built in Bomber Wash to complete implementation of the AMP.

6. Wildlife Improvements

More quail guzzlers will be installed in the Kane Spring - Bomber Wash area. Large guzzlers for big game animals may be developed in the center of the WSA.

7. Recreation

New roads constructed by mineral and energy companies may open parts of the area to vehicle use. ORV use and camping will increase on the south end of the WSA particularly in Bomber Wash and tributaries and the other south and east draining washes. This area will be "discovered" as the Las Vegas Valley grows.

MEADOW VALLEY MOUNTAINS

Future Development Assumptions

1. Oil and Gas and Geothermal

The WSA has speculative oil and gas potential and low geothermal. One exploratory oil and gas well has been drilled and abandoned in the WSA in the last few years. Although the results of that drilling are unknown, a possibility exists that exploration activities may resume involving seismic lines and wells. The wells will be drilled primarily on the eastern two-thirds of the WSA on slopes less than 30 percent. Wells may number two or three and each well disturbs approximately 10 acres for a drill pad and access.

2. Mineral Development

Exploration activities may occur, primarily for nonmetallics in higher potential areas of the WSA. These are the areas near Avertt reservoir, near mining claims on the western edge, a region south of Hackberry Canyon and in the southwestern and southeastern reaches. This will involve ORV use, some road construction, drilling and test pits. Any mines that develop are most likely to be along the eastern boundary in the Permian red beds or the Avertt reservoir portions of the WSA. Gypsum, perlite and phosphate are the most likely minerals to be mined. Small sand and gravel operations will develop along the Highway 93, Kane Springs Wash and

Meadow Valley Wash boundaries.

3. Communication Sites and Rights-of-Way

No interest has been expressed in new rights-of-way or communication sites. A minor realignment of the Meadow Valley Wash railroad alignment may occur. Communication sites are unlikely because much higher peaks occur in all the surrounding ranges.

4. Land Disposals

Some land may be patented for minerals. No other land disposals are anticipated.

5. Range Improvements

Two reservoirs will be developed in the northeastern corner of the WSA and three more in the central portion. An existing jeep trail will be extended about two miles to service two of these reservoirs. Hackberry and Sunflower Springs will be further developed including a 2-1/2 mile pipeline running southwest of Hackberry Spring. A drift fence will be built in the northern end of the WSA and an additional five to ten miles of fence would be built in the northern and central portions of the WSA.

6. Wildlife Improvements

Several big game guzzlers will be installed in the central portion of the WSA.

7. Recreation

New roads constructed by mineral and energy companies and other casual use will open the area to vehicle use. The new Arrow Canyon State Park to the south will attract further attention to the area. Also, as the Las Vegas Valley grows people will be willing to drive farther for recreation. These factors will combine to cause increased recreation use, particularly by ORV's. Farrier, Wildcat, and all the east draining washes will be utilized by ORV's.

MORMON MOUNTAINS

Future Development Assumption

1. Oil and Gas and Geothermal

The WSA has speculative oil and gas potential and low geothermal. Exploration activities for oil and gas may occur particularly in the western one-third of the WSA. This will involve seismic lines, road building, and exploratory well drilling. The wells, if drilled, would generally be confined to slopes of less than 30 percent, and will disturb approximately 10 acres each for a drill pad and access. Wells would number no more than two or three.

2. Minerals

In spite of the low mineral potential of the WSA for everything but sand gravel and lime, prospecting has occurred in several areas in the past and is likely to occur in the future. Exploration activities involving ORV use, some road construction, drilling and test pits are most likely to occur in the vicinity of the Whitmore Mine on the south and the existing claims on the north end. Other areas probably affected are alluvial areas along the entire southern end of the WSA. Small sand and gravel pits will develop along Meadow Valley Wash.

3. Communication Sites and Rights-of-Way

Although no interest has been expressed in communication sites, Mormon Peak has some potential as a site because it is the highest point in about a 20-mile radius. Terrain would limit a facility to that which could be helicopter installed and serviced. The Air Force is the most likely user. New rights-of-way are unlikely other than expansion along the railroad corridor in Meadow Valley Wash.

4. Land Disposals

No land disposals are anticipated.

5. Range Improvements

Hackberry, Wiregrass, and Rye Grass Springs with pipelines will be developed further with additional water storage capacity. Pipeline associated with each project will range from about one mile to four miles in length.

6. Wildlife Improvements

Nine additional large (10,000 gallons) big game guzzlers will be developed in the eastern and southern portion of the WSA. Three of them will be fenced. Numerous catchment dams will be constructed in the central portion of the WSA. One of these will be fenced. Approximately 5,000 acres of pinyon-juniper will be converted to grasses by fire, either a "let it burn" wildfire or controlled burning. The spring developments and pipelines mentioned above in the range improvements section are also part of the HMP planned projects designed to alleviate grazing competition between livestock and bighorn.

7. Recreation

Dispersed recreation uses including ORV use, hunting, camping, and pine nut harveting will increase along the existing cherrystem roads and jeep trails and new roads constructed by the mineral and energy interests. ORV use possibly including racing, will increase in the south and southwestern portion of the WSA.

SOUTH PAHROC RANGE

Future Development Assumption

1. Oil and Gas and Geothermal

The WSA has very low potential for oil and gas and geothermal. Consequently, there is a very remote possibility of only one well on the westernmost edge of the WSA. This well could disturb a total of 5-10 acres for pad and access road.

2. Mineral Development

The perlite mine will expand along the eastern fringe of the WSA. This will be an underground operation but will involve additional surface disturbance including access roads and waste piles. Additional mining will probably occur on claims located on the northeastern corner of the WSA. A small scale sand and gravel operation may develop on the north end for the use of the highway department. No other extraction activities are anticipated although additional prospecting may occur. This may involve small scale, test pits, drilling and road construction of the periphery of the WSA.

3. Communication Sites and Rights-of-Way

No interest has been expressed in communication sites or rights-of-way except for an Air Force proposal to locate portable electronic packages there temporarily. Additional powerlines are unlikely due to terrain restrictions. The peaks of the range have potential for communication sites. Unless the population or economic acitivity of the county would increase drastically, the peaks would most likely be used only by the Air Force for small helicopter installed and serviced facilities.

4. Land Disposals

Some land may be patented as part of the perlite mine expansion. No other land disposals are anticipated.

5. Range Improvements

No range projects are anticipated within the WSA.

6. Wildlife Improvements

There is a proposed quail guzzler on the southeast end of the WSA. Also a proposed bighorn sheep reintroduction may occur in the near future which may result in the need for additional projects such as water catchments.

7. Recreation

Vehicle use is limited in the WSA because of terrain. Vehicle use and camping will increase in the mouths of the washes on the north and west end of the WSA as the population of southern Nevada grows.

WILDERNESS MANAGEMENT POLICY

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Chapter I. Introduction

I. A. The Purpose of This Document

The purpose of this document is to describe how the Bureau of Land Management (BLM) will manage lands administered by the BLM which are designated by Congress as part of the National Wilderness Preservation System. At present, the Bureau of Land Management administers no wilderness areas. The Bureau has developed a Wilderness Management Policy at this time for the following reasons: (1) to inform BLM field officials, Congress, and the public as to how BLM will manage wilderness areas, so this can be taken into account during BLM wilderness studies and during deliberations on wilderness recommendations affecting BLM public lands, and (2) to provide guidance for BLM personnel to use in managing future BLM wilderness areas at such time as Congress designates them.

The BLM's Wilderness Management Policy will apply to public lands administered by BLM that have been specifically designated as wilderness by an Act of Congress. The Wilderness Management Policy has a different purpose than BLM's *Interim Management Policy and Guidelines for Lands under Wilderness Review.* The *Interim* Management Policy is an interim measure governing lands under wilderness review. The Wilderness Management Policy governs lands designated by Congress as wilderness. (Appendix C of this document summarizes BLM's wilderness review process.) If Congress designates a wilderness study area as wilderness, the Interim Management Policy ceases to apply, and instead the Wilderness Management Policy applies thereafter. If Congress decides that a particular wilderness study area will *not* be designated as wilderness, the Interim Management Policy ceases to apply, and the area is managed for the uses and activities indicated in the pertinent BLM planning documents for the area.

This policy document does not apply to BLM-administered public lands in Alaska. If public lands in Alaska are designated as wilderness in the future, they will be managed under applicable provisions of the Wilderness Act of 1964 and in accordance with additional congressional guidance in the Alaska National Interest Lands Conservation Act of 1980 (ANILCA). The ANILCA recognized special conditions in Alaska in connection with such activities as subsistence uses, access and transportation.

I. B. Mandate from Congress

The BLM wilderness review program stems from Section 603 of the Federal Land Policy and Management Act of 1976 (FLPMA). In FLPMA, Congress gave BLM its first unified, comprehensive mandate on how the public lands should be managed. The law establishes a policy of generally retaining the public lands in Federal ownership, and it directs the BLM to manage them under principles of multiple use and sustained yield. The BLM is to prepare an inventory of the public lands and their resources, including identification of areas having wilderness characteristics. Management decisions for the public lands are to be made through a land-use planning process that considers all potential uses of each land area. All public lands are to be managed so as to

prevent unnecessary or undue degradation of the lands.

Under FLPMA, wilderness preservation is part of BLM's multiple-use mandate, and wilderness values are recognized as part of the spectrum of resource values and uses to be considered in the inventory and in the land-use planning process. Section 603 of FLPMA specifically directs the BLM, for the first time, to carry out a wilderness review of the public lands. (The complete text of section 603 appears in Appendix A of this document. The BLM's wilderness review process implementing section 603 is summarized in Appendix C.)

Section 603(c) of FLPMA tells the BLM how to manage public lands designated as wilderness, in these words:

> "Once an area has been designated for preservation as wilderness, the provisions of the Wilderness Act which apply to national forest wilderness areas shall apply with respect to the administration and use of such designated area, including mineral surveys required by section 4(d)(2) of the Wilderness Act, and mineral development, access, exchange of lands, and ingress and egress for mining claimants and occupants."

The Wilderness Act of 1964 contains a number of provisions addressing the administration and use of national forest wilderness areas. Those most pertinent to BLM wilderness management are cited in the following paragraphs. Section 2(a) says:

> ". . .it is hereby declared to be the policy of the Congress to secure for the American people of present and future generations the benefits of an enduring resource of wilderness. For this purpose there is hereby established a National Wilderness Preservation System to be composed of federally owned areas designated by Congress as 'wilderness areas', and these shall be administered for the use and enjoyment of the American people in such manner as will leave them unimpaired for future use and enjoyment as wilderness, and so as to provide for the protection of these areas, the preservation of their wilderness character, and for the gathering and dissemination of information regarding their use and enjoyment as wilderness. . . ."

Section 4 of the Wilderness Act is devoted to the use of wilderness areas. Section 4(b) says:

> "Except as otherwise provided in this Act, each agency administering any area designated as wilderness shall be responsible for preserving the wilderness character of the area and shall so administer such area for such other purposes for which it may have been established as also to preserve its wilderness character. Except as otherwise provided in this Act, wilderness areas shall be devoted to the public purposes of recreational, scenic, scientific, educational, conservation, and historical use."

Section 4(c) prohibits certain activities, in these words:

> "Except as specifically provided for in this Act, and subject to existing private rights, there shall be no commercial enterprise and no permanent road within any wilderness area designated by this Act and, except as necessary to meet minimum requirements for the administration of the area for the purpose of this Act (including measures required in emergencies involving the health and safety of persons within the area), there shall be no temporary road, no use of motor vehicles, motorized equipment or motorboats, no landing of aircraft, no other form of mechanical transport, and no structure or installation within any such area."

Sections 4(c), 4(d), and 5 provide special exceptions to the prohibitions in section 4(c) by providing for the following activities:

— existing private rights.

— measures required in emergencies involving the health and safety of persons within the area.

— activities and structures that are the minimum necessary for the administration of the area as wilderness.

— use of aircraft and motorboats, where already established, may be permitted to continue.

— measures necessary in the control of fire, insects, and diseases.

— any activity, including prospecting, for the purpose of gathering information about mineral or other resources, if carried on in a manner compatible with the preservation of the wilderness environment. (This includes mineral surveys conducted on a planned, recurring basis by the Geological Survey and Bureau of Mines.)

— continued application of the U.S. mining and mineral leasing laws until December 31, 1983.

— water resource developments may be authorized by the President where he determines that such use will better serve the interests of the United States and the people thereof than will its denial.

— livestock grazing, where already established, shall be permitted to continue.

— commercial services necessary for activities which are proper for realizing the recreational or other wilderness purposes of the areas.

— adequate access to surrounded State-owned and privately-owned lands, or such lands shall be exchanged for Federally-owned land.

— ingress and egress to surrounded valid mining claims and other valid occupancies.

Section 5(c) provides land acquisition authority, in these words:

> "Subject to the appropriation of funds by Congress, the Secretary of Agriculture is authorized

> to acquire privately owned land within the perimeter of any area designated by this Act as Wilderness if (1) the owner concurs in such acquisition or (2) the acquisition is specifically authorized by Congress."

In addition to the basic management authority in the Wilderness Act, management provisions may appear in the legislation establishing each wilderness area. Standard provisions included in most wilderness legislation make clear that the effective date of the new law will apply wherever the Wilderness Act's management provisions mentioned the effective date of the Wilderness Act, and, for areas administered by the Department of the Interior, make clear that the Secretary of the Interior will continue to administer the areas.

In some cases, special provisions have been incorporated into the legislation (e.g., special mining area in the River of No Return Wilderness in Idaho). These provisions override the general management provisions of the Wilderness Act and must be regarded as specific direction for management of the area in question.

Congress has subsequently commented on wilderness management in House and Senate committee reports and conference reports accompanying wilderness legislation. These reports are part of the legislative history of the laws they accompany and can be helpful in determining the intent of Congress where the language in the law itself is unclear. Although reports on wilderness laws passed after 1964 do not become part of the legislative history of the Wilderness Act, they nonetheless indicate the interpretation given to the Wilderness Act by the congressional committees during their consideration of the subsequent legislation. Such report language addresses a variety of subjects. For example, guidelines for administering grazing use in wilderness areas appear in the Conference Report (House Report 96-1126) on the Central Idaho Wilderness Act of 1980 (P.L. 96-312). House Report 95-540 on the Endangered American Wilderness Act of 1978 discusses the interpretation of the Wilderness Act as it relates to such uses and activities as: hunting and fishing; trails, bridges, and trail signs; control of fire, insects, and diseases; cabins and sanitary facilities; shelters and campsite facilities; and weather modification and special equipment.

The provisions of FLPMA, the Wilderness Act, and future Acts of Congress designating specific BLM areas as wilderness are BLM's mandates on the management of wilderness areas. All activities in wilderness areas must be carried out in conformance with these mandates.

I. C. Meaning of the Congressional Mandate

The congressional mandate contains three basic concepts which form the basis for BLM's Wilderness Management Policy.

— *Wilderness Preservation Concept:*

Congress has directed the BLM to perpetuate the wilderness resource by managing designated wilderness areas so that their wilderness character is preserved unimpaired.

— *Wilderness Use Concept:*

Congress has directed the BLM to provide opportunities for the public to use designated wilderness areas for recreational, scenic, scientific, educational, conservation, and historical purposes in a manner so as to leave the wilderness area unimpaired for future use and enjoyment as wilderness.

— *Nonconforming Use Concept:*

Congress has directed the BLM to accommodate in wilderness areas certain activities, existing uses, and private rights which are generally nonconforming to wilderness preservation and wilderness use.

The meaning of each of these concepts is discussed below.

1. Wilderness Preservation Concept

The Wilderness Act directs that wilderness areas be managed to provide for their protection, the preservation of their natural conditions, and the preservation of their wilderness character. The factors which make up an area's wilderness character are spelled out in the Wilderness Act's definition of wilderness (section 2(c)). These factors are referred to in FLPMA collectively as "wilderness characteristics," and they fall into three broad categories:

a. Naturalness—A wilderness area "generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable." Wilderness areas must be managed to ensure that this description remains accurate.

b. Outstanding Opportunities for Solitude or a Primitive and Unconfined Type of Recreation—A wilderness area "has outstanding opportunities for solitude or a primitive and unconfined type of recreation." Solitude is defined as (1) the state of being alone or remote from habitations; isolation; (2) a lonely, unfrequented or secluded place. The emphasis is on the opportunities a person has to avoid the sights, sounds, and evidence of other people within a particular area. Primitive and unconfined types of recreation are defined as those activities that provide dispersed, undeveloped recreation which do not require facilities or motorized equipment. In most cases, opportunities for solitude and primitive recreation go hand-in-hand, and both are dependent on naturalness. Wilderness areas must be managed to ensure that these opportunities are not degraded.

c. Special Features—Congress specified that wilderness areas "may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value." These are optional wilderness characteristics; an area may meet the Wilderness Act's definition of wilderness without having these special features, but they are usually present in wilderness areas, and in some cases they may be a prime reason for wilderness designation. Also, these features contribute to an area's opportunities for primitive recreation. Wilderness areas must be managed to ensure that these opportunities are not degraded.

In order to preserve these wilderness characteristics as Congress directed, the management of BLM-administered wilderness must be based on a *principle of nondegradation.* Under this principle, the central thrust of BLM wilderness management is to prevent degradation of natural conditions, opportunities for solitude or primitive recreation and special features.

It is recognized that there is often variation in the level of naturalness, solitude, types of primitive recreation, and special features, present within a wilderness—or between different wilderness areas. Also, different lands have different capabilities to sustain types and amounts of use. The principle of nondegradation means that wilderness areas will be managed to provide for the protection and perpetuation of the values of the wilderness resource and prevent deterioration caused by other resource activities or by visitor use, and, when necessary, to restore deteriorated sites to an acceptable condition.

Most uses will result in some changes in the condition of the wilderness resource. Some uses cause little or no change, while others have the potential for serious change. Therefore, it is necessary to define limits of acceptable change. This must be established using the conditions *generally* prevailing in each wilderness at the time of congressional designation as a benchmark unless there is unacceptable biological, physical, or social degradation present. This does not mean that existing human-caused impacts in some areas will set a standard, or a sort of "lowest common denominator", which other more natural areas will be allowed to reach. Managers must determine what human-caused changes can be allowed without causing degradation and what measures can be taken to bring situations below the limit of acceptable change back to an acceptable level. This may influence the ways in which recreational, scenic, scientific, educational, conservation, and historical uses, as well as nonconforming uses, are done in the area, so their impact on the wilderness resource can be kept within the limits of acceptable change.

In the case of some of the nonconforming uses, such as mining, provided for by Congress in the Wilderness Act and subsequent legislation, the condition of the wilderness resource may be degraded as a result of an allowed use. However, in such cases, the principle of nondegradation and the limits of acceptable change should be used as an analysis tool for the reasonable mitigation of impacts, consistent with the applicant's conduct of the allowed use, and as a standard for determining the condition to which the area will be returned where and when rehabilitation is appropriate.

In this document, the principle of nondegradation is reflected in the policies and guidelines for specific activities.

Two equivalent terms used many times in this document reflect the wilderness preservation concept—"preservation of wilderness character" and "protection of the wilderness resource."

2. Wilderness Use Concept

Section 4(b) of the Wilderness Act provides fundamental guidance on how wilderness areas shall be used, in these words:

> "Except as otherwise provided in this Act, each agency administering any area designated as wilderness shall be responsible for preserving the wilderness character of the area and shall so administer such area for such other purposes for which it may have been established as also to preserve its wilderness character. Except as otherwise provided in this Act, wilderness areas shall be devoted to the public purposes of recreational, scenic, scientific, educational, conservation, and historical use."

Wilderness areas are thus open to use and provide a variety of benefits to society. Use might be "on-site," taking direct advantage of the multiple resources of the area. Or the use and benefits may be derived "off-site," such as through enjoyment of the scenery at a distance from a nearby highway, through indirect benefits from the area's resources (i.e., water quality, wildlife, etc.), or just the knowledge that the area exists.

There is a limit to the extent to which such uses as recreation and education may take place within wilderness, because the Wilderness Act also says that they must occur in a manner so as to leave the wilderness unimpaired for future use and enjoyment as wilderness. Provision may be made for recreational, scenic, scientific, educational, conservation, and historical use of wilderness areas in ways that do not jeopardize the conditions of naturalness, the opportunities for solitude or a primitive and unconfined type of recreation, or the special features that existed at the time an area was designated as wilderness by Congress. All public use will be administered to ensure that the wilderness resource is kept unimpaired.

Public use for recreation purposes is generally a prevalent use of wilderness. However, the Wilderness Act makes it clear that recreation is only one of the purposes of the National Wilderness Preservation System. Sometimes there are places within wilderness where particularly sensitive values—such as colonial bird nesting sites—may dictate that recreation activities be restricted or entirely excluded.

Use capacity (recreational, historic, educational, etc.), based on social and ecological elements, will be established for each wilderness area, and will be considered in determining how much use to allow.

A second factor which may limit the use of wilderness has to do with the nonconforming use provisions of the Wilderness Act and subsequent legislation. In portions of a wilderness area where nonconforming activities such as mining and grazing are permitted, there may be instances when the public purposes listed in section 4(b) may be displaced either temporarily or permanently.

3. Nonconforming But Accepted Use Concept

Congress specially provided for certain activities and existing uses which otherwise would have been prohibited in wilderness areas under the general management provisions of sections 2(a), 4(b) and 4(c). For a complete list of these nonconforming but accepted activities, refer to section I.B.; generally they are: existing private rights; aircraft and motorboats; control of fire, insects, and diseases; gathering of resource information; mining; grazing; water resource development; commercial recreation services; and access to non-Federal inholdings.

The FLPMA directs that all uses of the public lands be conducted so as to prevent unnecessary or undue degradation of the lands. In wilderness areas, this means that the BLM must manage the nonconforming but accepted uses described above so as to prevent unnecessary or undue degradation of the area's wilderness character. As on nonwilderness public lands, some of the nonconforming but accepted uses may be restricted or entirely excluded where particularly sensitive resource values occur or where the public interest would be better served by restricting or excluding them.

Chapter II. Management Policy for BLM-Administered Wilderness

The policy guidance in this chapter is followed in Chapter III by guidelines for specific activities, based on these policies and on their interaction with other applicable policies for the management of public lands. No policy document can address every potential situation. Managers must use their best judgment in applying these policies and guidelines to particular situations. In cases not covered by specific guidance, managers will resolve questions by testing alternative courses of action against the policies in this chapter to arrive at the alternative that is most consistent with the policy as a whole.

Uses and values will vary between wilderness areas and frequently vary among different parts of an individual wilderness. There may be wide differences in terrain and other geographic characteristics, climate, vegetation, and wildlife. Historical patterns of use, local customs, and the traditional attitudes of visitors also differ between and within wilderness areas. Consequently, activities that are accepted and management practices that are necessary and appropriate on one wilderness may be either unnecessary or unacceptable on others. While this may require some flexibility in the management and administration of the individual units of wilderness, all are part of one National Wilderness Preservation System and shall be consistently managed within the intent of the Wilderness Act.

This policy document prescribes the general objectives, policies, and specific activity guidance applicable to all BLM wilderness areas. Specific management objectives, requirements, and decisions implementing administrative practices and visitor activities in individual wilderness areas are developed and described in the wilderness management plan for each unit.

II. A. General Policy

1. The Department of the Interior's policy is to manage wilderness areas under the administration of the Bureau of Land Management so as to preserve their wilderness character, and to manage them for the use and enjoyment of the American people in a manner that will leave them unimpaired for future use and enjoyment as wilderness. The wilderness areas will be devoted to the public purposes of recreational, scenic, scientific, educational, conservation, and historical use.

2. The Department's policy is to allow the nonconforming but accepted uses specifically permitted in wilderness areas by the Wilderness Act and subsequent laws in a manner that will prevent unnecessary or undue degradation of the area's wilderness character.

3. The Department's policy is to manage BLM wilderness areas consistent with the policies above so as to augment multiple use management of adjacent and nearby lands through protection of watersheds and water yield, wildlife habitat, natural plant communities, and similar natural values.

II. B. Specific Policy Guidance

1. **Preservation of Wilderness Character.** BLM wilderness areas will be managed so as to be affected primarily by the forces of nature, with the imprint of human work substantially unnoticeable; so as to maintain the area's outstanding opportunities for solitude or primitive and unconfined recreation; and so as to protect any ecological, geological, or other features of scientific, educational, scenic, or historical value which the area may contain.

a. **Naturalness.** BLM will foster a natural distribution of native species of wildlife, fish, and plants by ensuring that natural ecosystems and ecological processes continue to function naturally. The BLM will minimize human influence on wildlife populations and work to prevent the extinction by human causes of plants and animals found in the areas. Hunting, fishing, and trapping will continue as authorized by State law, when carried out in a manner consistent with preservation of an area's wilderness character.

The BLM will allow fire, insects, and diseases to play a natural role in the wilderness ecosystem, except where these activities threaten human life, property, or high value resources on adjacent nonwilderness lands, or where these would result in unacceptable change to the wilderness resource. (The guidelines in Chapter III will indicate some types of unacceptable change.)

The BLM will keep watersheds, water bodies, water quality, and soils in a natural condition and will allow associated ecological processes previously altered by human influences to return to their natural condition.

The limits of acceptable change will be defined in the wilderness management plan for each wilderness area, and the BLM will endeavor to restore those sites which have dropped below this level.

b. **Solitude.** BLM will maintain and enhance the area's outstanding opportunities for solitude by providing natural settings with few reminders of human activity or civilization and by providing opportunities for relatively few contacts with other visitors.

c. **Special Features.** BLM will maintain unimpaired the ecological, geological, and other features of scientific, educational, scenic, or historical value found in BLM wilderness areas.

2. **Prohibition of Certain Uses**

Except where subject to existing private rights, where necessary to meet minimum requirements for the administration of the wilderness area for the purposes of the Act or as specifically provided for elsewhere in these policies, there shall be no temporary road, no use of motor vehicles, motorized equipment, or motor boats, no landing of aircraft, no other form of mechanical transport and no structure or installation within wilderness areas. There shall be no commercial enterprise or permanent road, except where subject to existing private rights or as specifically provided for in this policy.

3. **Minimum Tool**

Tools, equipment, or structures may be used for managment when they are the minimum necessary for protection of the wilderness resource or when necessary in emergency situations for the health and safety of the visitor. Management will use the minimum tool, equipment, or structure necessary to successfully, safely, and economically accomplish the objective. The chosen tool, equipment, or structure should be the one that least degrades wilderness values temporarily or permanently.

For the purpose of the above paragraph, accepted tools, equipment, and structures may include but are not limited to: fire towers, patrol cabins, pit toilets, temporary roads, spraying equipment, hand tools, fire-fighting equipment caches, fencing, and controlled burning. In special or emergency cases involving the health and safety of wilderness visitors, or the protection of wilderness values, aircraft, motorboats, and motorized vehicles may be used.

4. **Visitor Use.** BLM wilderness areas will be managed to provide for their use and enjoyment in ways that are consistent with preservation of their wilderness character and that will leave them unimpaired for future use and enjoyment as wilderness.

Visitor use may be related to any of the following public purposes: recreation, scenic, scientific, educational, conservation, and historical use.

Visitor use facilities may be installed if they are the minimum necessary for the health and safety of wilderness visitors, or for the protection of the wilderness resource. (See also "minimum tool," in section B.3. above.) Facilities that are solely for the convenience of the visitor are not compatible with preservation of wilderness character and therefore will not be provided in wilderness areas.

The use capacity of the wilderness area will be determined, and will be used by managers to anticipate and avert degradation of the area's wilderness character and as a basis for mitigating the impacts caused by various uses.

If visitor use threatens to impair the area's wilderness character, managers will take action to prevent impairment. Indirect methods of reducing visitors' impact, such as trail design, information, and education, will be preferred over direct (regulatory) methods, such as limits on party size, length of stay, or number of parties. In case of conflict between visitor uses that depend upon a wilderness setting and those that do not, the uses dependent upon a wilderness setting will be favored.

Visitor use in wilderness involves certain risks to the visitor as a consequence of isolation from the conveniences of a technological world. The visitor must accept these risks in entering a wilderness area. In emergencies involving the health and safety of persons within the area, managers will take appropriate measures, such as search and rescue operations.

5. **Nonconforming Uses.**

a. **Valid Existing Rights.** Private rights existing as of the date an area was designated as wilderness will be recognized. In some cases, such rights may involve activities addressed elsewhere in this document under standards prescribed by the Wilderness Act. (One example of this is valid mining claims, addressed in section (h).) Valid existing rights in situations not covered by these policies will be considered by the BLM on a case-by-case basis, in consultation with the Regional Solicitor, to determine the nature of the rights and the extent to which the BLM must regulate the exercise of those rights pursuant to the Wilderness Act and other laws.

b. **Aircraft and Motorboats.** Use of aircraft or motorboats may be permitted to continue in wilderness areas where such uses were established prior to the date the area entered the National Wilderness Preservation System. Such use, when permitted to continue, will be monitored on a regular basis to determine if its continuation is appropriate. Use may be regulated or discontinued as necessary to protect resources in the area or to preserve the area's wilderness character.

c. **Control of Fires, Insects, and Diseases.** Where fire, insects and diseases threaten human life, property, or high value resources on adjacent nonwilderness lands, or where they would cause unacceptable change to the wilderness resource, measures may be taken as necessary to control them. Allowable actions will be specified in the wilderness management plan for each wilderness area.

d. **Gathering Information About Resources.** Any activity, including mineral prospecting, for the purpose of gathering information about natural resources in wilderness, will be permitted provided it is carried on in a manner compatible with the preservation of the wilderness resource. (This section does not affect mineral prospecting activities conducted under the mining laws, which are covered in section (h) below. The Wilderness Act provides for these activities in wilderness areas until midnight December 31, 1983.)

(1) No form of overland mechanical transport may be used in connection with prospecting for minerals or any activity for the purpose of gathering information about individual resources, unless approved by the BLM in accordance with the regulations 43 CFR 2920 - Leases, Permits, and Easements (effective April 15, 1981) (published in 46 FR 5772).

(2) Any person desiring to use motor vehicles, motorized equipment, mechanized transport, or to land aircraft, for mineral prospecting or for gathering information about resources is required to notify the BLM in writing. Approval documents will assure activities are conducted in a manner compatible with the preservation of the wilderness resource. No degradation of wilderness resources or values will be allowed. Restoration of disturbed areas is required and must take place as soon as possible once activities terminate. Performance bonds may be required.

e. **Proposed Water Resource Facilities.** If the President authorizes new water resource facilities or activities, pursuant to section 4(d)(4)(1) of the Wilderness Act, the BLM will manage those authorized operations to prevent unnecessary or undue degradation of the area's wilderness character. (Existing water resource facilities are discussed in (f) below, and water facilities for livestock grazing are discussed in (g) below.)

f. **Existing Water Resource Facilities.** Some wilderness areas may contain minor water resource facilities that were found to be substantially unnoticeable in the area. If such structures are present and were explicitly recognized by Congress as being acceptable in a specific wilderness, they may be operated and maintained to keep them in an effective, usable condition. Maintenance may not change the location, size, or type of the facility, or increase the storage capacity of a reservoir.

g. **Livestock Grazing.** Grazing of livestock, where established prior to the effective date of the Act designating the area as wilderness, shall be permitted to continue subject to this policy and the BLM grazing regulations 43 CFR 4100. Existing grazing may include not only the utilization of the forage resource, but also the use and maintenance of livestock management improvements and facilities associated with the grazing activity at the time of designation and which are in compliance with an approved Allotment Management Plan.

Congressional guidelines regarding "Grazing in National Forest Wilderness Areas," published in House Report 96-1126, dated June 24, 1980, will be implemented in all BLM-administered wilderness with pre-existing grazing. These guidelines will be applied using the normal planning and environmental assessment process and will be integrated into all management plans for the wilderness area.

h. **Minerals Management.** Until midnight December 31, 1983, the United States mining laws and all laws pertaining to mineral leasing shall extend to BLM-administered wilderness areas to the same extent as applicable prior to the date the wilderness was incorporated into the National Wilderness Preservation System.

(1) **Mining Law Administration.** Holders of unpatented mining claims validly established on any BLM-administered wilderness prior to inclusion of such unit in the National Wilderness Preservation System are accorded the rights provided by the United States mining laws as then applicable to public land involved. Persons prospecting or locating mining claims in BLM-administered wilderness on or after the date on which the said unit was included in the National Wilderness Preservation System are accorded similar rights subject to the provisions of the Wilderness Act and subsequent establishing legislation. All claimants must comply with reasonable conditions for the protection of resources in accordance with the general purposes of maintaining the National Wilderness Preservation System unimpaired for future use and enjoyment of its wilderness character.

Timber on mining claims within BLM-administered wilderness may be cut only for the actual development of the claim or uses reasonably incident thereto. Any severance or removal of timber, other than that necessary to provide clearance, on the claim shall be in accordance with sound principles of forest management and shall be done in such a manner as to minimize adverse effects on the wilderness resource. In the development and operation of mining claims, claimants will be required to prevent erosion and the obstruction, pollution, or siltation of streams, lakes, or springs or deterioration of the land.

A bond as prescribed in 43 CFR 3809.1-9 may be required. All reasonable measures will be required of the operator to reclaim disturbed lands as soon as feasible after operations cease. Ordinarily, needed work will be accomplished within one year after operations cease, unless provided otherwise by the BLM. Whenever possible and feasible the objectives of reclamation shall be to restore the surface to a contour which appears to be natural, although this may not be the original contour. Where such measures are impractical or impossible, the objective shall be to provide for the maximum achievable slope stability. Reclamation shall in all cases include revegetation where feasible and practical. If revegetation by natural means will not occur in time to prevent serious soil loss or other damage to wilderness values, revegetation by planting may be required, with preference given to the use of native species, where practical and reasonable.

If an application for patent has been filed but not acted upon when the requirements of the immediately preceding paragraph would normally be invoked, the requirements will be suspended while the patent application is under consideration. However, those requirements for the prevention of erosion and pollution, siltation or obstruction of streams, lakes, or springs or deterioration of the land will continue to be observed.

The title to timber on patented mining claims validly established after the land was included in the National Wilderness Preservation System will remain in the United States, subject to a right of the patentee to cut and use timber. The patentee may cut and use as much of the mature timber as is needed in the extraction, removal and beneficiation of the mineral deposits, if needed timber is not otherwise reasonably available. The cutting shall comply with the requirements for sound principles of forest management as set forth in stipulations issued by the BLM.

In the development and operation of mining claims, claimants will be required to prevent unnecessary or undue degradation of the land.

(2) **Mineral Leasing.** Until January 1, 1984, all laws pertaining to mineral leasing will continue to apply in wilderness areas to the same extent they applied before the area was designated.

State Directors will make decisions on whether or not to issue mineral leases, permits, and licenses in wilderness areas. The State Director's decision to issue mineral leases will be made through the environmental assessment process and after consideration of what will best serve the public interest.

Reasonable stipulations for the protection of the wilderness character of the land will be incorporated into mineral leases, permits, and licenses covering lands within BLM-administered wilderness. Stipulations will be consistent with the use of the land for purposes for which they are leased, permitted, or licensed.

(3) **Common Varieties.** Permits shall not be issued for the removal of mineral materials commonly known as common varieties under the Materials Act of July 31, 1947, as amended and supplemented.

(4) **Withdrawal.** Subject to valid rights then existing, effective January 1, 1984, the minerals in lands designated as wilderness are withdrawn from all forms of appropriation under the mining laws and from disposition under all laws pertaining to mineral leasing, unless Congress specifically provides otherwise in the law designating the area as part of the National Wilderness Preservation System or in subsequent legislation.

i. **Commercial Services.** Commercial services such as those provided by packers, outfitters, and guides may be provided within wilderness areas to the extent necessary for activities which are proper for realizing the recreational or other wilderness purposes of the areas.

j. **Access to Non-Federal Lands.** States or persons, and their successors in interest, who own land completely surrounded by a wilderness area shall be given such rights as may be necessary to assure adequate access to that land. Adequate access is defined as the combination of routes and modes of travel which will, as determined by the BLM, cause the least lasting impact on the wilderness resource, and at the same time serve the reasonable purposes for which the State or private land is held or used.

No road shall be constructed across wilderness until authorized by the BLM. Access by routes or modes of travel not available to the general public may, when fully justified, be permitted by written authorization. The authorization will prescribe routes and modes of travel which will result in the least lasting impact on wilderness values and, at the same time, serve the reasonable purposes for which the land is held or used. A performance bond will usually be required (in accordance with Title V of the Federal Land Policy and Management Act).

Where the exercise of rights of access to surrounded State or private land would be detrimental to wilderness values, the BLM shall, before granting access, attempt to acquire such land by purchase or by exchange.

6. Existing Structures and Installations

After Congress has designated a wilderness area, an inventory will be made of existing structures and installations, critically evaluating the purposes and need for each, and its historical significance, if any. If a structure or installation has historical significance, it may be retained as a historic feature of the area. If it does not have historical significance, it may be maintained for continued use if it meets the "minimum tool" policy in paragraph 3 above, or if it is necessary for a use specifically permitted by the Wilderness Act or by the law designating the affected wilderness area. Any structure or installation that does not qualify for retention under the above criteria will be removed.

In maintaining or modifying existing structures and installations, the manager should consider the potential for using native materials and alternative technological approaches to make them as unobtrusive as possible.

7. Acquisition of Non-Federal Lands

Acquisition of non-Federal lands within wilderness areas is authorized by purchase or exchange. When such lands are to be acquired, the BLM will seek to acquire the mineral rights as well as the surface rights. Acquisition of privately-owned lands will occur only if the private owner concurs with the acquisition, or if the acquisition is specifically authorized by Congress to be accomplished by eminent domain.

8. Research and Collection of Management Information

Wilderness areas administered by BLM will provide opportunities for research and scientific activities that use wilderness areas for study of natural environments and ecosystems. Information collection activities by resource managers for wilderness and other purposes may also be conducted in wilderness. All research and collection of management information within the wilderness area will be conducted in an unobtrusive manner, by methods compatible with the preservation of the area's wilderness character. (Refer to section II. B. 5. d. for policy on gathering information about resources and section III. L. for specific policies on research.)

9. Buffer Zones and Adjacent Lands

No buffer zones will be created around wilderness areas to protect them from the influence of activities on adjacent land. The fact that nonwilderness activities or uses can be seen or heard from areas within the wilderness shall not, of itself, preclude such activities or uses up to the boundary of the wilderness area.

When activities on adjacent lands are proposed, the specific impacts on those activities upon the wilderness resource and upon public use of the wilderness area will be addressed in environmental assessments or environmental impact statements, as appropriate. Mitigation of impacts from outside wilderness will not be so restrictive as to preclude or seriously impede such activities.

10. Visitor Information and Education

Part of the wilderness experience valued by many visitors is the freedom from rules and regulations. Visitor education will be used to achieve management objectives where feasible. Only the minimum amount of regulation necessary to achieve desired objectives will be used.

To protect the natural appearance of wilderness areas, visitor informational and educational programs, signs, and poster boards will normally be located outside the wilderness boundary. An exception to this general rule is that informational or regulatory signs may be placed within wilderness areas as a management tool to correct specific problems and protect the wilderness resource or for the health and safety of visitors when these signs meet the "minimum tool" standard (see section II. B. 3.)

Informational and educational materials pertaining to the management of BLM-administered wilderness in general or to specific wilderness areas will be readily available to the wilderness user at BLM offices. Such materials will inform visitors of the responsibilities and risks involved in visiting a wilderness area.

11. Administration

a. **Wilderness Management Plans.** A wilderness management plan will be developed for each BLM-administered wilderness area as a means of applying the Wilderness Management Policy to that specific area. The plan will be tailored to the local conditions of each wilderness by prescribing any specific objectives appropriate to the area, consistent with the Wilderness Management Policy. Plans should consider the different kinds of environmental settings, history of use, and management situations pertaining to the individual wilderness area. The wilderness management plan will describe the strategy to be used to implement both the Wilderness Management Policy and the specific objectives prescribed for the area.

Management plans for individual wilderness areas should be flexible and must be updated periodically to reflect changes in conditions and use. New inventory data, use patterns, demand trends, supply conditions, management concerns, etc., may change over a period of time, and some goals and objectives applicable soon after a wilderness area is designated may not be appropriate further in the future. Managers should use the land management planning process to analyze all available options, so as to respond to changing conditions.

In developing wilderness management plans, the concept of stratification or zoning between wilderness areas or within individual areas should be considered as a means of achieving management objectives or providing different experiences and opportunities. For example, it may be desirable to manage one wilderness or a portion of an area within a wilderness primarily for protection of an endangered wildlife species. In another wilderness, managers may want to establish different zones of experience, providing recreational opportunities ranging from (1) high concentrations of use to (2) a series of more natural areas as one penetrates into the inner core, to (3) a pristine area which may have no trails or signs. Stratification or zoning can help the wilderness manager achieve objectives, protect resources, and satisfy user demands and expectations.

b. **Coordination.** When a wilderness area's boundaries overlap BLM administrative boundaries, management will be coordinated between District and State Offices to ensure uniformity in management practices.

When a wilderness area involves contiguous lands administered by BLM and by another Federal agency, the BLM will remain an active manager of lands under its administration, unless it has been determined that more effective wilderness management can be achieved by transferring the land to the other agency or by some form of cooperative management. State Directors have the option of approving cooperative management agreements with other Federal agencies on a case-by-case basis. Wherever appropriate, a joint management plan by all agencies involved will be encouraged.

Coordinated planning efforts will also involve State fish and wildlife agencies and all other Federal, State, county, and local agencies, Indian tribal governments, and organizations that may be affected by wilderness management activities.

c. **Wilderness Management Personnel.** Wilderness management personnel may be employed to help implement the provisions of a wilderness management plan. They can facilitate protecting the wilderness resource by assisting visitors with suggestions, advice, and information; enforcing regulations; performing minor trail repairs; and removing trash. Wilderness management personnel can reduce site-specific problems, such as the overuse of popular camp areas, by relocating camp sites and performing rehabilitation work. The manager may also use wilderness management personnel to gather information about resource trends and visitor use. The decision to employ wilderness management personnel should be made on a case-by-case basis. Their use may or may not be required, depending on local conditions. In cases where personnel are not employed specifically for wilderness management, the BLM will assign appropriate personnel as needed to monitor the condition of the wilderness resource.

Chapter III. Guidelines for Specific Activities

The guidelines in this chapter are an application of the policies set forth in Chapter II to various activities that may or may not take place in BLM-administered wilderness areas. These guidelines are also based on other applicable laws and on other policies and regulations of the Department of the Interior.

These guidelines will be used in developing a Wilderness Management Plan for each BLM-administered wilderness area, containing guidance on how specific activities will be treated in that area. Until such time as a Wilderness Management Plan is approved by the State Director, interim decisions on specific activities in a wilderness area will be made by BLM field officials based on these guidelines.

Decisions on any activities not addressed in these guidelines will be made on the basis of the policies in Chapter II.

III. A. Recreation and Visitor Use

Wilderness areas administered by the BLM shall provide a variety of uses including, but not limited to, recreational, scenic, scientific, educational, conservation, and historical.

The wilderness resource will be dominant in all management decisions where a choice must be made between preservation of wilderness character and visitor use. There are places and times within wilderness where unique values may require that recreation and visitor use activities be restricted or entirely prohibited in order to preserve an enduring resource of wilderness. The highest priority among various kinds of visitor use will be accorded those activities which (1) are most dependent upon the wilderness environment and cannot be reasonably accommodated outside of wilderness, (2) least affect the wilderness environment.

Consideration must be given to the ability of the wilderness resource to sustain visitor use without loss or degradation of the wilderness resource itself. Carrying capacity—social, biological, and physical—may vary widely within and between wilderness areas due to variations in types and amounts of uses, resource characteristics, and the capabilities of the resources to sustain different types and amounts of uses. The leading management tool and document to consider these factors and set guidelines for managing visitor use will be the Wilderness Management Plan. These plans will describe the level at which an area is able to absorb use and impacts and will describe measures needed to protect wilderness values.

The following specific guidance applies to visitor use within BLM wilderness:

1. Visitor Management

Visitor management techniques will be utilized in wilderness when necessary to preserve both the wilderness resource and the visitor's wilderness experience and opportunities. Management of visitor use will be the minimum necessary to provide for use of the area as wilderness, and to preserve the wilderness character of the area.

Visitor management should be planned to maintain a high-quality wilderness resource and to protect the quality of the wilderness experience. The Wilderness Management Plan will consider all appropriate and compatible methods to manage levels of use that are within the capacity of the wilderness. Visitor management may be carried out by both direct and indirect methods.

a. **Indirect Methods.** Visitor use may be managed through such indirect efforts as:

(1) Wilderness rangers informing visitors about less congested areas.

(2) Obliteration of improvements at overcrowded or undesirable sites.

(3) Improved access to tributary, lightly used areas.

(4) Information to (a) encourage use of lightly used or relatively unknown areas, or to (b) stress the experiences and value to be found outside the peak use period.

(5) Minimize the promotion of an outdoor experience in wilderness and emphasize such uses of undeveloped areas outside wilderness.

(6) Reroute primary transportation away from major destination areas. Have spur trails to vistas or camp areas.

(7) Design and management of trail-head areas, including access roads and parking areas.

(8) Education of visitors about good wilderness manners and ethics.

(9) Use of built-in frictions or obstacles, such as low-standard access roads.

(10) Removal of trail-head improvements and/or restriction of travel into areas already overused or where capacity use already occurs.

b. **Direct Methods.** More direct methods to achieve visitor management may include:

(1) Regulating the use of saddle horses and/or pack stock.

(2) Managing areas strictly for foot or horse use only, to protect sensitive sites and resources, or to provide different recreation opportunities or experiences within the wilderness.

(3) Requiring permits for specific areas or time periods. A permit or registration system can be an important tool for both the wilderness manager and wilderness visitor. Both systems provide visitor use data on the number and distribution of visitors. In addition, a permit or registration system can give the visitor site-specific information helpful in preplanning a trip. A permit system can be utilized also to limit or redistribute and disperse visitor use.

(4) Limiting the number of people in parties or the number permitted to stay overnight at specific locations.

(5) Limiting numbers of users. The Wilderness

Management Plan will analyze needed methods and identify necessary measures.

(6) Stock grazing or canoe/boat-beaching restrictions, both private and commercial, on overused or concentration areas.

2. Improvements and Facilities

Facilities and improvements such as trails, bridges, signs, and campsites, will be provided only where they are the minimum necessary for protection of the wilderness resource and for the health and safety of persons within the area. No facilities or improvements will be provided for the comfort and convenience of the visitor. The need for proposed facilities, such as latrines, fire circles, and fences will be justified in the Wilderness Management Plan. Improvements and facilities when approved will be constructed of materials which harmonize with the natural environment.

Existing improvements or facilities not specifically provided for in these guidelines—those having no historical value and not necessary for preservation of an area's wilderness character or for the health and safety of persons within the area—will be removed.

Construction, maintenance, and removal of facilities and improvements will be by primitive means. Exceptions to this policy, such as using handpowered portable tools and aircraft, may be approved by the State Director if no other alternatives exist, the mechanized or mechanical equipment is the minimum necessary, and they will not degrade or impair the area's wilderness character.

a. **Trail Systems**

(1) New trails will be constructed only if they are needed to preserve wilderness values and resources and they will not significantly degrade the degree of naturalness or solitude in the area. Trails are an acceptable improvement provided they are constructed and maintained so they have an insignificant impact on wilderness values. Wilderness management plans will address where trails and related facilities are appropriate.

(2) Existing trails and trail systems will be evaluated to determine if they are the minimum necessary to meet wilderness management objectives. Trails may be expanded, relocated, restored, or closed as a result of the evaluation. Wilderness Management Plans will address the present situation and evaluate future needs. Trailhead access points will be evaluated at this time. Trailhead locations should be carefully chosen as they have a profound influence over management of visitor use. It may be desirable to locate trailhead access points well outside the wilderness boundary to reduce their impact upon the wilderness area.

(3) Trail routes shall be selected to provide scenic vistas and, where possible, a varied scene. Heavily used areas should generally be served by spur trails and should be bypassed by primary trails. Trails will not be constructed with treads of more than 24 inches in width except where a wider trail is justified for protection of the wilderness resource. Trails should follow natural contours where possible and result in minimum disturbance to soil and ground cover.

(4) Bridges will be designed and constructed so as to harmonize with the environment and will be the minimum size and complexity necessary to allow foot or stock use. Besides adhering to the basic standards set out for improvements and facilities above, bridges will be provided only:

(a) When no other route or crossing is reasonably available.

(b) Where the crossing, during the primary season of public use:

—Cannot be safely negotiated on foot.
—Cannot be safely forded by horses.

(c) Where less formal devices are frequently destroyed or damaged by flood water.

b. **Signing**

Only a minimum of signs will be provided for the visitor, in combination with availability of accurate maps, route descriptions, brochures, etc. Signs will be provided primarily for visitor safety and resource protection. Signs will not be placed within the wilderness for the convenience of the user.

(1) Signs may be erected at trail junctions, showing directions with arrows.

(2) Informational or interpretive signs will not be used to mark streams, lakes, mountain peaks, passes, or points of interest.

(3) Regulatory signs will be kept to the minimum necessary, and may be of materials other than wood. When regulatory signs are posted within a wilderness, notice pertaining to these regulations will also be posted at trailheads or major access points and published where feasible on brochures or maps or othewise made available to the user prior to entry into the wilderness.

c. **Use of Campsites**

(1) Campsites or camping areas may be designated if necessary for the purpose of wilderness resource protection. They will be located sufficiently distant from lakes, streams, trails, or other natural attractions as to allow appropriate use without unacceptable degradation of the focal point of public interest. Space between sites should be sufficient to ensure a reasonable degree of solitude and quiet. A "no-trace" camping concept will be promoted.

(2) Shelters or lean-tos will not be constructed, and existing shelters will be removed from within wilderness. Shelters or lean-tos determined to have historical value may remain, and their protection and use will be addressed in the Wilderness Management Plan.

(3) Garbage pits will not be permitted, and existing garbage pits will be closed. A "pack-it-in, pack-it-out" philosophy will be encouraged with visitors. Every practicable medium will be used to educate and inform the visitor on this point.

(4) Improvised camp structures constructed by visitors will not be permitted. They will be dismantled and obliterated when and where found.

(5) Hitchracks or corrals and other improvements to facilitate stock use may be used as necessary to prevent damage to the wilderness resource. They will be located away from main-traveled trails, streams, lakes, camping areas, and focal points of interest, and will be constructed of materials which harmonize with the environment.

d. **Outfitter Camps**

The Wilderness Management Plan will carefully analyze the role of the outfitter-guide in a particular wilderness. Some wilderness areas may not be particularly suited to this kind of service due to size, shape, location, etc., or to the objectives for management of a particular wilderness. Also, the visitor-use capacity of the wilderness as well as public needs must be considered in making a decision to permit or not permit outfitter-guide services. If allowed, these services will be planned and administered to meet public needs while maintaining the wilderness resource. Operations will be so administered as to be harmonious with those of wilderness visitors who do not employ such services.

Outfitter-guide camps will be located off the primary trails or scenic spur trails and at sufficient distance from attractions to avoid conflicts with other visitors. The BLM will select the location of outfitter-guide campsites as necessary to protect wilderness resources and the wilderness experience of other visitors. Outfitter-guides will operate under special recreation permits, which will include stipulations for management of the use. The Wilderness Management Plan shall evaluate the need for temporary caches not involving erection of structures and shall designate their locations, if caches are to be approved.

3. Fuelwood

If campsites or cooking fires are permitted, fuelwood cutting should be limited to dead and down material. The use of portable cookstoves will be encouraged whenever possible. The Wilderness Management Plan will define any regulations or restrictions needed for wilderness resource protection.

4. Contests

Contests, such as physical or mental endurance of a person or animal; foot races; canoe or boat races; competitive trail rides; survival contests or exercises (including military); and other activities of this nature shall not be permitted in wilderness areas. These activities do not depend on a wilderness setting, and they cause impacts that degrade the wilderness character of the area, thus adversely affecting wilderness-dependent uses.

5. Recreational or Hobby Mineral Collecting

Recreational or hobby collecting of mineral specimens (rockhounding) will be allowed in wilderness. Such use will be limited to hand methods or detection equipment that does not cause surface disturbance, such as a metal detector or Geiger counter. In addition, methods shall not be permitted that in any way adversely affect or degrade the wilderness resource or the experiences of visitors in the area. (This paragraph does not cover mining claims, which are addressed in section III. I below.)

III. B. Cultural and Historic Resources

Archeological and historical sites and values are a unique and nonrenewable part of the wilderness resource. They are protected by provisions of the Uniform Rules and Regulations (43 CFR Part 3) to carry out the Antiquities Act of 1906, the Historic Sites Act of 1935, Executive Order 11593, the National Historic Preservation Act of 1966, as amended, and the Archeological Resources Protection Act of 1979. To the extent not inconsistent with the concept of wilderness preservation and the intent of the Wilderness Act, and objectives for cultural resource management, these resources are available for recreational, scenic, scientific, educational, conservation, and historical uses (including ceremonial or religious use by Native Americans).

Cultural resources, in most instances, will be subject to the forces of nature in the same manner as other wilderness resources. Study or management will not normally include any excavation, stabilization, or interpretation activities. Salvage, rehabilitation, stabilization, reconstruction, and restoration work on archeological and historic sites; excavation; and intensive inventories may be permitted on a case-by-case basis where the project will not degrade the overall wilderness character of the area and such activity is needed to preserve the particular resource. State Director approval is required for all such projects.

The National Historic Preservation Act and Executive Order 11593 require an inventory and evaluation of cultural resources. The evaluation study for National Register of Historic Places eligibility is made using criteria in 36 CFR 1202.6 and in consultation with the State Historic Preservation Officer (SHPO). Those cultural resources found to qualify are nominated to the National Register of Historic Places.

Those sites or structures that do not qualify for the National Register may be allowed to deteriorate naturally, or be removed or obliterated. However, some structures may qualify for retention as historic features or under the "minimum tool" policy (refer to section II. B. 3), or as facilities necessary for a use specifically permitted by the Wilderness Act or by the law designating the affected wilderness area.

Management direction for cultural resources that qualify for nomination to the National Register is subject to compliance with Section 106 of the National Historic Preservation Act and 36 CFR 800. A decision to remove, maintain, or allow historic or prehistoric structures to deteriorate naturally is a Federal undertaking which will affect the resources. In working through the compliance processes, a determination will be made as to what feasible and prudent alternatives exist to satisfactorily mitigate adverse effects of the proposed decision on the cultural resources. A Memorandum of Understanding will be developed with all consulting parties whenever an adverse effect determination is made (36 CFR 800). The range of alternatives might include recording to established standards (by drawings and photographs), salvage (by removing or dismantling), stabilizing, or restoration. Stabilization or restoration and subsequent maintenance may be considered for administrative structures that meet the "minimum tool" policy (refer to secton II. B. 3).

III. C. Foresiry Resources

1. Cutting of Trees and Shrubs

Management of the forest cover will be directed toward retaining the primeval character of the environment and allowing natural ecological processes to operate freely. Trees, shrubs, and other vegetative products will not be sold or cut for nonwilderness purposes except under specified conditions set forth in these guidelines for valid mining claims and under emergency conditions such as fire, insect, and disease control.

2. Cutting of Trees for Administrative Purposes

Trees may be cut for use in the construction and maintenance of authorized improvements that are located within the wilderness when the necessary material cannot be reasonably obtained or brought in from outside the wilderness. Such cutting within the wilderness shall be done away from trails or campsites, and all evidence of the cutting shall be disposed of insofar as possible.

3. Cutting of Trees for Fuelwood

(Refer to section III. A. 3., Fuelwood, for specific guidance.)

4. Reforestalion

Reforestation, in the absence of natural revegetation, will generally be prohibited, but in rare cases may be authorized by the Director to prevent deterioration or loss of the wilderness resource when the cause of the damage or loss is due to human activities and there is no reasonable expectation of natural reforestation. The natural processes of ecological succession will be the preferred method of site-restoration. When reforestation action is necessary, only native species and only primitive methods, such as hand planting, will be used.

III. D. Fish and Wildlife

Management will seek a natural distribution, number, and interaction of indigenous species of fish and wildlife. Natural processes will be allowed to occur in wilderness ecosystems, which include fish and wildlife populations, as far as possible without human influences. Management will protect the conditions that allow natural processes a maximum degree of freedom.

To the extent possible, wildlife species in BLM wilderness should be allowed to maintain a natural balance with their habitat and with each other. Wildlife may be harvested under State regulations, fisheries management will be consistent with preservation of the area's wilderness character, and direct fish and wildlife control measures will be applied only upon a showing of need under standards described below.

The BLM, in cooperation with State and Federal public health and fish and game officials, may make special exceptions, where necessary to control disease epidemics or other health hazards in which wildlife species are involved as carriers.

The basic responsibilities of the BLM and other cooperating State and Federal agencies in the management of fish and wildlife are not altered by the Wilderness Act. However, the constraints of the Act and the intent of the Congress articulated in the Act and in subsequent legislation will guide the management of wildlife in wilderness. Memoranda of Understanding will be developed with appropriate State game and fish agencies to clarify wildlife management jurisdictions. Wilderness Management Plans will specify wildlife habitat conditions to be maintained. Development of management plans will fully involve all Federal, State, and local agencies and organizations in the formation of management direction.

The preservation of sensitive, rare, threatened, and endangered species dependent on wilderness conditions will be favored.

The killing of native birds and mammals which are a natural component of the biotic community, but are not provided protection by State or Federal law, will be discouraged or controlled if necessary through public education and Memoranda of Understanding with State game and fish agencies.

1. Hunting and Fishing

Hunting and fishing are permitted in BLM-administered wilderness, subject to applicable State and Federal laws and regulations. Coordination with State game and fish agencies for the management of resident wildlife and fish species will be sought in order to ensure maintenance of the wilderness resource. Specific management criteria may be cited in Memoranda of Understanding and the Wilderness Management Plan.

2. Fish and Wildlife Habitat

The proper balance of fish and game animals with their habitat may be achieved by managing public hunting and fishing. Objectives for the management of fish and wildlife habitat are normally compatible with the objectives for maintaining general wilderness character, or careful planning usually can make them so. Where incompatible, the requirements for maintenance of wilderness values will be overriding.

Vegetative manipulation projects for fish and wildlife purposes may be approved by the State Director on a project-by-project basis if they do not degrade wilderness character, or if they correct conditions which are a result of human influence, or if the project will promote the perpetuation of a threatened or endangered species.

Habitat manipulation by chemical or mechanical means may only be approved on a project-by-project basis where necessary for threatened or endangered species, or to correct unnatural conditions resulting from human influence. Such activities will be allowed only where manipulation would enhance the wilderness resource and where natural processes have been unsuccessful. Hand or aerial seeding of native vegetation species may be permitted after disturbances, such as wildfire, to restore essential food plants to a wilderness where the natural process of healing is not expected to occur. Actions of this type will be allowed only to enhance wilderness values and not to optimize habitat needs of any single wildlife species to the detriment of wildlife diversity in an untrammeled environment.

Wildfire or prescribed burning may be used as a wildlife management tool if carefully designed to maintain or enhance the wilderness resource. Wildfire or prescribed burning is to be used only when the project can be accomplished without serious or long-lasting damage to watershed or the area's wilderness character. Prescribed burning will not be permitted to improve wildlife utilization. It may be done only for the following purposes:

a. It is needed to maintain the natural condition of a fire-dependent ecosystem or to re-introduce fire where past strict wildfire control measures have interfered with natural ecological processes.

b. A primary value of a given wilderness will be sustained as a result of the burning.

c. It will promote the perpetuation of a threatened or endangered species.

Additional specific guidelines on prescribed burning appear in section III. E, Fire Management.

The BLM may authorize State and Federal agencies to use temporary enclosures and facilities to trap or transplant wildlife as long as they are the minimum necessary to protect or maintain the wilderness resource.

Although construction of facilities to enhance an area's value for wildlife or fish is not consistent with the free operation of natural processes, there are situations where such measures may be necessary for the continued existence or welfare of wildlife or fish living in wilderness. This is particularly true in the case of species adversely affected through human activities in such areas. Certain permanent installations to maintain conditions for wildlife and fish, upon consideration of their design, placement, duration, and use, may be permitted if the resulting change is compatible with preservation of wilderness character and is consistent with wilderness management objectives for the area, and if the installations are the minimum necessary to accomplish the task. Permissible actions under these criteria may include: installations to protect sources of water on which wildlife depend, such as enclosures; and water sources such as springs, wells, and guzzlers. Fisheries activities may be permitted as long as their purpose is to protect natural conditions, restore deteriorated habitat, and maintain wilderness values.

3. Wildlife Manipulation

In some instances, wildlife species once native to the wilderness have been forced from their original habitat by the encroachment of human beings and human activities. To the extent that these factors can be altered or managed within the intent of the Wilderness Act, native species no longer established in the wilderness area may be reintroduced and managed as a part of the wilderness resource. Care must be exercised to be certain that the species is native. Such programs will be addressed in the wilderness management plan.

Management of established exotic species (e.g., chukar partridge, pheasant) not natural to an area may continue where they enhance the wilderness character of a particular wilderness. Introduction of new exotics will not be permitted. Coordination with State and Federal agencies should be established for control of undesirable exotic populations.

4. Fish Stocking

Fish-stocking programs needed to meet wilderness management objectives shall be developed in cooperation with the State agencies or the Fish and Wildlife Service and shall be coordinated with overall wilderness management objectives. The probability of increased visitor use at stocked waters and the full impact and effect of such use on the wilderness resource will be recognized and considered.

Memoranda of Understanding with State agencies should be developed to establish a stocking policy for each wilderness where stocking is permitted, as a basis for a stocking plan. Basic decisions will be spelled out in the wilderness management plan for each wilderness. Aerial stocking of fish by State agencies or the Fish and Wildlife Service may continue where this was an established practice prior to designation. Authorization will be on a case-by-case basis. Aerial stocking should be done outside of general visitor use seasons when possible. Wilderness management plans should contain all necessary justification, mitigation, and definition of planting programs.

Some general guides for fish stocking in BLM wilderness units are:

a. Native species should be favored in waters with a history of supporting such species. Species native to the vicinity or region may be considered as an alternative. Exotic fish will not be considered, except where such practice existed prior to wilderness designation and it meets wilderness management objectives.

b. Waters with established undesirable fish or where overpopulations of fish have occurred should be managed for fish best suited to the water under natural conditions, and to meet wilderness management objectives. Barren waters may be stocked only if the wilderness management plan defines the desirability of such an action. The scientific value of barren lakes will be considered prior to approval to stock.

c. Presently nonstocked waters which at one time supported a native fish population, and which would provide suitable habitat for native fish species that would enhance the wilderness experience of visitors, may be considered for stocking on a case-by-case basis.

d. In all fish-stocking activities, threatened or endangered species shall receive primary consideration.

5. Trapping

Trapping of furbearers, such as mink, marten, beaver, and muskrat, is a compatible wilderness use and will be allowed under State laws and regulations. Commercial trapping will not be permitted. Incidental trapping, if it is not the trapper's sole source of livelihood, is permitted.

6. Rodents

Rodents in BLM-administered wilderness areas shall be exempt from control programs, except where overpopulations pose a serious threat to other wilderness values or resources and property outside the boundaries of the wilderness. Control projects must be approved on a case-by-case basis.

7. Predators

Predacious animals are an important part of natural life systems within wilderness. They play an important role in the natural selection and survival processes, helping to maintain critical population balances of wild species. They should be able to survive and compete with other species, free from unregulated human interference and the traditional pursuit of sport or bounty. Where control of predators is necessary to protect threatened or endangered wildlife species or on a case-by-case basis to prevent special and serious losses of domestic livestock, it will be accomplished by methods which are directed at eliminating the offending individuals while at the same time presenting the least possible hazard to other animals or to wilderness visitors. Poison baits or cyanide guns are not compatible. Control programs will be carried out by or under the direction of the U.S. Fish and Wildlife Service (FWS), the BLM, or State agencies, and will be consistent with the Secretary of the Interior's policies on animal damage control and with the Memorandum of Understanding between the BLM and FWS. Programs will comply with BLM Animal Damage Control plans where these have been previously adopted. The State Director will approve predator-control programs on a case-by-case basis, and under such conditions as to ensure minimum disturbance to the wilderness resource and visitors.

Approval of predator control actions must be contingent upon a clear showing that the removal of the offending predators will not diminish the wilderness values of the area, because this kind of wildlife is an integral part of the wilderness, as well as an adjunct to the visitor's experience.

III. E. Fire, Insect, and Disease Management

1. Fire Management

a. Overriding Fire Guidance

All fires will be controlled to prevent loss of human life or property within wilderness areas or to prevent the spread of fire to areas outside of the wilderness where life, resources, or property may be threatened. Human-caused wildfires will be prevented and/or controlled unless the fire meets wilderness fire management objectives.

b. Natural Fire

Natural fire (i.e., lightning-caused) is normally a part of the ecology of the wilderness, and human efforts to ban this agent may have resulted in significant ecological changes in the flora and fauna of some areas. In order to return some wilderness ecosystems to a more natural state, it may be appropriate to allow natural fire to burn, but only in conformance with an approved Fire Management Plan and the overriding fire guidance in section (a) above.

c. Prescribed Burning

Where natural fire under prescription does not meet wilderness fire management objectives, prescribed burning with ignition by Bureau personnel may be allowed on a case-by-case basis for the following purposes:

(1) To reintroduce or maintain the natural condition of a fire-dependent ecosystem.

(2) To restore fire where past strict fire control measures had interfered with natural, ecological processes.

(3) Where a primary value of a given wilderness will be perpetuated as a result of the burning, or

(4) Where it will perpetuate a threatened or endangered species.

Prescribed fires will be allowed only in conformance with an approved Fire Management Plan. State Director approval is required.

d. Removal of Evidence of Fire Control Activities

Temporary fire camps, helispots, and other sites used for fire suppression or control activities shall be removed upon completion of use and the site rehabilitated to as natural a state as possible.

e. Fire Detection

Fire detection methods necessary to meet wilderness objectives will be used. Structures such as lookouts may be maintained or constructed if they are the minimum necessary to achieve wilderness management objectives and there is no other alternative detection method. Preference will be given to detection methods which have the least permanent impact on wilderness values, such as aircraft overflights and lookouts located outside the wilderness boundary.

f. Pre-Suppression

Pre-suppression activities may be allowed to meet wilderness management objectives and where necessary for the protection of the public health or safety. All pre-suppression programs will be addressed in the Fire Management Plan.

g. Suppression

Fire-suppression measures and techniques shall be used which achieve the wilderness management objectives with the minimum adverse impact on the wilderness resource. Preference shall be given to the methods and equipment which least alter the landscape or disturb the land surface. Structures and improvements shall be located outside the wilderness boundary, except those that are the minimum necessary to achieve wilderness management objectives.

h. Fire Management Plans

The following considerations will be covered in each Fire Management Plan: wilderness management objectives for the area, historic fire occurrence, natural role of fire, proposed degree of suppression, expected fire behavior, acceptable suppression techniques, smoke management, and effects on adjacent landowners. The plan will conform to criteria established by the BLM defining the limits of acceptable fire weather, fire behavior, and fire effects. Each Fire Management Plan will be written to conform to the Wilderness Management Plan (WMP) for the area it addresses and will become an addendum to the WMP upon approval.

2. Control of Insects and Diseases

Insect and disease outbreaks will not be artificially controlled, unless it is necessary to protect timber or other valuable resources outside of the wilderness area, or in special instances when loss to resources within a wilderness is undesirable (e.g., absence of control would threaten rare or endangered plants or animals). Such control measures will consist of the effective combination of actions which have the least adverse impact on the wilderness resource.

Special care must be taken when using chemicals or other artificial methods to control insect and disease outbreaks because of their possible adverse effect on the total biological community.

Insect or disease suppression projects in BLM wilderness must be approved by the Director.

III. F. Water Resource Management

1. Watershed Restoration

Watershed restoration may be undertaken where deteriorated soil and hydrologic conditions caused by human beings or human influences create a serious threat or loss of wilderness values; or where, even though not human-caused, these conditions present a definite hazard to life or property, or where such conditions could cause serious depreciation of important environmental quality outside the wilderness. Where such dangers are not imminent or where natural vegetation may be expected to return in a reasonable time, restoration work will not be done.

Re-establishment of vegetation as a watershed-restoration measure, where there is no reasonable expectation of natural healing, will be accomplished using native or naturalized species. Overland motorized equipment will not be used where more primitive equipment can accomplish the restoration objectives. Exceptions must be fully justified, based upon serious imminent threat to high downstream values. Approval by the Director is required for all watershed restoration proposals.

2. Water Improvements

a. Water-yield Improvements

Protection of wilderness values and management objectives generally preclude use of water-yield improvement techniques. Water-yield improvement prescriptions, if contemplated, must be clearly compatible with maintenance of the wilderness resource. The Director's approval is required for project approval.

b. New Water-Development Structures

The establishment of new water-regulating structures, power installations, and related improvements is subject to approval by the President. (Range and wildlife water-development structures are discussed under separate subheadings and are not subject to Presidential approval.)

The BLM's conclusions and recommendations in connection with proposals for new water-resource developments will be based upon comprehensive, factual information developed by an environmental analysis, and draft and final environmental impact statements, as prescribed by the National Environmental Policy Act. The final environmental impact statement requires the Director's approval. Any recommendation in favor of the proposal must be based upon a clear showing that the public values to be gained exceed the values that would be lost, and that the need cannot be met outside the wilderness. When a proposed structure is thus found to be in the public interest, consideration should also be given to a recommendation to exclude the applicable area from wilderness.

c. Existing Structures

Reservoirs, ditches, catchments, and related facilities for the control or use of water may have existed within BLM wilderness under valid permits or other authority prior to the area's designation as wilderness. These may be maintained if they are needed in the public interest, or are a part of a valid existing right.

Routine maintenance and repair of an existing structure which does not change the location, size or type, or increase the original intended storage capacity of a reservoir may be approved by the State Director. The operation, maintenance and repair of such facilities may include occasional motorized access where no other reasonable or practical alternatives exist.

Reconstruction of any structure or restoration of a natural body of water to its original or historic level must be approved by the State Director. Primitive means of transport and hand tools will be used wherever and whenever feasible.

Any proposal to increase the storage capacity of a reservoir, or replace a reservoir, which was not under a valid permit at the time the unit was incorporated into the National Wilderness Preservation System, will be considered as a new structure and subject to approval by the President.

The wilderness management plan should carefully evaluate each improvement to determine if the continuation of the use is needed in the public interest, or is part of a valid existing right. Maintenance needs and methods must be specifically stated if the improvement is to remain. If not, the improvement should be allowed to deteriorate naturally. When natural processes themselves cannot effectively and safely return the abandoned improvement back to a natural condition, restoration by other means may be used. Only hand labor and tools, and seeding with native or naturalized species may be permitted. All restoration projects are subject to approval by the State Director.

d. Snow Measurement

The measurement of snow within BLM wilderness is permitted under the following conditions:

(1) Measurement of snow will be accomplished by primitive means. If use of a helicopter was an established practice in measuring snow within an area prior to wilderness designation, that same use may be permitted. However, ways and means of eliminating the need will be explored.

(2) No new data sites can be established unless they are parts of projects approved by the President under provisions of Section 4(d)(4) of the Wilderness Act. Use of existing data sites may continue until adequate correlation can be established with data sites outside the wilderness. Installation of automated equipment (sensing devices, data collection platforms, etc.) may be permitted on a temporary basis at existing data sites to accelerate the development of correlations with data sites outside the wilderness. Access will be by primitive means except as specifically provided for in (1) above.

(3) Only miniaturized and unobtrusive types of equipment may be installed, and must be camouflaged to blend with the terrain as much as possible. Practices such as burying equipment and using antennae which can be removed during nonuse periods, will be used to minimize the visual impacts of the data site.

e. Water Quality

Maintaining or enhancing water quality is of high priority in management of the wilderness resource. Water quality monitoring instruments and hydrometeorological devices may be permitted if these are the minimum necessary for protection of the wilderness resource. All instruments and devices must be miniaturized and unobtrusive. No motorized vehicles will be permitted for installation, maintenance, or monitoring and surveillance.

f. Weather Modification Over Wilderness

Use of lands within the National Wilderness Preservation System as target areas for weather modification activities will not be approved unless the following conditions are met:

(1) The proponent can provide reasonable, scientifically supportable assurance that the activities will not produce permanent, substantial changes in natural conditions.

(2) The proposal does not include any feature that might reasonably be expected to produce conditions incompatible in appearance with the wilderness environment or reduce its value for recreation, scenic, scientific, education, conservation, or historical use.

The effects of weather modification activities may be permanent or temporary depending upon the type, duration, and degree of change in weather brought about by that activity.

Generally, short-term weather-modification activities, which will produce only occasional, incidental, temporary, or transitory changes in the weather with carryover effects on the ground lasting only a few days beyond the actual seeding period, can be permitted over wilderness because little or no permanent, identifiable ecological or physical impact is likely. Conversely, long-term weather modification programs, which will produce a repeated or prolonged change in the weather during any part of successive years, are likely to have a direct and often substantial impact in terms of ecological and physical effects. Even though the human contribution to these impacts on the ecology and physical conditions on the ground may be obscured by the fact that the activities are carried on outside or above the wilderness, they nevertheless can be recognized to be the result of human activities and therefore cannot be permitted where they will directly affect wilderness areas.

State Directors will gather necessary information relative to items 1 and 2 and make recommendations to the Director on any activity or application. The Director will approve activities or installations relative to weather modification affecting wilderness.

III. G. Air Quality

Under the Clean Air Act (as amended, 1977), BLM-administered lands were given Class II air quality classification, which allows moderate deterioration associated with moderate, well-controlled industrial and population growth. The BLM will manage designated wilderness areas as Class II unless they are reclassified by the State as a result of the procedures prescribed in the Clean Air Act (as amended, 1977).

According to the Clean Air Act, air quality reclassification is the prerogative of the States. The States must follow a process mandated by the Clean Air Act Amendments of 1977, involving a study of health, environmental, economic, social, and energy effects, a public hearing, and a report to the Environmental Protection Agency.

Administrative actions within wilderness areas will comply with the air quality classification for that specific area.

III. H. Rangeland Management

1. Livestock Grazing Operations

Section 4(d)(4)(2) of the Wilderness Act provides for continued livestock grazing where established prior to designating the area as wilderness. The objective of livestock management in wilderness is:

> Utilize the forage resource in conformity with established wilderness objectives for each area and the BLM grazing regulations (43 CFR 4100), and through practical, reasonable, and uniform application of the congressional guidelines and policy.

Further insight on the subject is in the Conference Report on S.2009 (House Report 96-1126) under the heading "Grazing in National Forest Wilderness Areas." These congressional guidelines and policy are to be considered in the overall context of the purposes and direction of the Wilderness Act and will be applied nationwide. They are reprinted here verbatim as an excerpt from House Report 96-1126:

Grazing in National Forest Wilderness Areas

Section 4(d)(4)(2) of the Wilderness Act states: "the grazing of livestock, where established prior to the effective date of this Act, shall be permitted to continue subject to such reasonable regulations as are deemed necessary by the Secretary of Agriculture."

The legislative history of this language is very clear in its intent that livestock grazing, and activities and the necessary facilities to support a livestock grazing program, will be permitted to continue in National Forest wilderness areas, when such grazing was established prior to classification of an area as wilderness.

Including those areas established in the Wilderness Act of 1964, Congress has designated some 188 areas, covering lands administered by the Forest Service, Fish and Wildlife Service, National Park Service and Bureau of Land Management as components of the National Wilderness Preservation System. A number of these areas contain active grazing programs, which are conducted pursuant to existing authorities. In all such cases, when enacting legislation classifying an area as wilderness, it has been the intent of the Congress, based on solid evidence developed by testimony at public hearings, that the practical language of the Wilderness Act would apply to grazing within wilderness areas administered by all Federal agencies, not just the Forest Service. In fact, special language appears in all wilderness legislation, the intent of which is to assure that the applicable provisions of the Wilderness Act, including Section 4(d)(4)(2), will apply to all wilderness areas, regardless of agency jurisdiction.

Further, during the 95th Congress, Congressional committees became increasingly disturbed that, despite the language of section 4(d)(4)(2) of the Wilderness Act and despite a history of nearly 15 years in addressing and providing guidance to the wilderness management agencies for development of wilderness management policies, National Forest administrative regulations and policies were acting to discourage grazing in wilderness, or unduly restricting on-the-ground activities necessary for proper grazing management. To address this problem, two House Committee on Interior and Insular Affairs Reports (95-620 and 95-1321) specifically provided guidance as to how section 4(d)(4)(2) of the Wilderness Act should be interpreted. This guidance appeared in these reports as follows:

> Section 4(d)(4)(2) of the Wilderness Act states that grazing in wilderness areas, if established prior to designation of the area as wilderness, "shall be permitted to continue subject to such reasonable regulations as are deemed necessary by the Secretary of Agriculture". To clarify any lingering doubts, the committee wishes to stress that this language means that there shall be no curtailment of grazing permits or privileges in an area simply because it is designated as wilderness. As stated in the Forest Service regulations (36 CFR 293.7), grazing in wilderness areas ordinarily will be controlled under the general regulations governing grazing of livestock on National Forests . . . .This includes the establishment of normal range allotments and allotment management plans. Furthermore, wilderness designation should not prevent the maintenance of existing fences or other livestock management improvements, nor the construction and maintenance of new fences or improvements which are consistent with allotment management plans and/or which are necessary for the protection of the range.

Despite the language of these two reports, RARE II hearings and field inspection trips in the 96th Congress have revealed that National Forest administrative policies on grazing in wilderness are subject to varying interpretations in the field, and are fraught with pronouncements that simply are not in accordance with Section 4(d)(4)(2) of the Wilderness Act. This had led to demands on the part of grazing permittees that section 4(d)(4)(2) of the Wilderness Act be amended to clarify the intentions of Congress. However, because of the great diversity of conditions under which grazing uses (including different classes of livestock) are managed on the public lands, the Conferees feel that the original broad language of the Wilderness Act is best left unchanged. Any attempts to draft specific statutory language covering grazing in the entire wilderness system (presently administered by four separate agencies in two different Departments) might prove to be unduly rigid in a specific area, and deprive the land management agencies of flexible opportunities to manage grazing in a creative and realistic site specific fashion.

Therefore, the conferees declined to amend section 4(d)(4)(2) of the Wilderness Act, agreeing instead to reaffirm the existing language and to include the following nationwide guidelines and specific statements of legislative policy. It is the intention of the conferees that the guidelines and policies be considered in the overall context of the purposes and direction of the Wilderness Act of 1964 and this Act, and that they be promptly, fully, and diligently implemented and made available to Forest Service personnel at all levels and to all holders of permits for grazing in National Forest Wilderness areas:

1. There shall be no curtailments of grazing in wilderness areas simply because an area is, or has been designated as wilderness, nor should wilderness designations be used as an excuse by administrators to slowly "phase out" grazing. Any adjustments in the numbers of livestock permitted to graze in wilderness areas should be made as a result of revisions in the normal grazing and land management planning and policy setting process, giving consideration to legal mandates, range condition, and the protection of the range resource from deterioration.

It is anticipated that the numbers of livestock permitted to graze in wilderness would remain at the approximate levels existing at the time an area enters the wilderness system. If land management plans reveal conclusively that increased livestock numbers or animal unit months (AUMs) could be made available with no adverse impact on wilderness values such as plant communities, primitive recreation, and wildlife populations or habitat, some increases in AUMs may be permissible. This is not to imply, however, that wilderness lends itself to AUM or livestock increases and construction of substantial new facilities that might be appropriate for intensive grazing management in non-wilderness areas.

2. The maintenance of supporting facilities, existing in an area prior to its classification as wilderness (including fences, line cabins, water wells and lines, stock tanks, etc.), is permissible in wilderness.

Where practical alternatives do not exist, maintenance or other activities may be accomplished through the occasional use of motorized equipment. This may include, for example, the use of backhoes to maintain stock ponds, pickup trucks for major fence repairs, or specialized equipment to repair stock watering facilities. Such occasional use of motorized equipment should be expressly authorized in the grazing permits for the area involved. The use of motorized equipment should be based on a rule of practical necessity and reasonableness. For example, motorized equipment need not be allowed for the placement of small quantities of salt or other activities where such activities can reasonably and practically be accomplished on horseback or foot. On the other hand, it may be appropriate to permit the occasional use of motorized equipment to haul large quantities of salt to distribution points. Moreover, under the rule of reasonableness, occasional use of motorized equipment should be permitted where practical alternatives are not available and such use would not have a significant adverse impact on the natural environment. Such motorized equipment uses will normally only be permitted to those portions of a wilderness area where they had occurred prior to the area's designation as wilderness or are established by prior agreement.

3. The replacement or reconstruction of deteriorated facilities or improvements should not be required to be accomplished using "natural materials", unless the material and labor costs of using natural materials are such that their use would not impose unreasonable additional costs on grazing permittees.

4. The construction of new improvements or replacement of deteriorated facilities in wilderness is permissible if in accordance with those guidelines and management plans governing the area involved. However, the construction of new improvements should be primarily for the purpose of resource protection and the more effective management of these resources rather than to accommodate increased numbers of livestock.

5. The use of motorized equipment for emergency purposes such as rescuing sick animals or the placement of feed in emergency situations is also permissible. This privilege is to be exercised only in true emergencies, and should not be abused by permittees.

In summary, subject to the conditions and policies outlined above, the general rule of thumb on grazing management in wilderness should be that activities or facilities established prior to the date of an area's designation as wilderness should be allowed to remain in place and may be replaced when necessary for the permittee to properly administer the grazing program. Thus, if livestock grazing activities and facilities were established in an area at the time Congress determined that the area was suitable for wilderness and placed the specific area in the wilderness system, they should be allowed to continue. With respect to areas designated as wilderness prior to the date of this Act, these guidelines shall not be considered as a direction to re-establish uses where such uses have been discontinued.

It is also the understanding of the conferees that the authorizing Committees intend to closely monitor the implementation of the guidelines through subsequent oversight hearings to insure that the spirit, as well as the letter, of the guidelines are adhered to by the Forest Service. Of course, the inclusion of these guidelines in this Joint Statement of Managers does not preclude the Congress from dealing with the issue of grazing in wilderness areas statutorily in the future.

This concludes the excerpt from House Report 96-1126.

a: **Management Plans**

The above congressional guidelines and policies will be applied in accordance with the environmental analysis process. Management prescriptions will be determined through the BLM resource management planning process and implemented by the allotment management plan.

Planning for livestock grazing operations in designated wilderness will be through the normal BLM resource management planning processes.

(1) Resource management plans establish:

(a) Objectives and prescriptions for management of wilderness. These are based on resource inventory data which includes, but is not limited to, ecosystem identification, rangeland conditions, existing uses, and areas of existing or potential conflict.

(b) Use levels of the rangeland resource and its relationship with other uses.

(2) Allotment management plans, within the direction established by the resource management plan, prescribe:

(a) The manner and extent to which livestock grazing will be conducted to meet wilderness objectives, rangeland resource needs, desired conditions of ecosystems, and other resource values.

(b) Direction and scheduling for accomplishing goals and objectives on individual allotments, including the development of rangeland improvement schedules and grazing system to be followed.

b. **Permits.**

Grazing operations within wilderness areas will be authorized by grazing permits. Permits for livestock operations will be issued only in areas where grazing was established at the time the wilderness was designated.

c. **Rangeland Analysis**

(1) Rangeland analysis in wilderness areas will follow the normal BLM standards.

(2) The development of the allotment management plan will determine the need for and standards of rangeland improvements and will prescribe the grazing system to be followed.

Where an approved allotment management plan exists at the time an area is designated as wilderness, it will be reviewed in context with the congressional guidelines and policy. Necessary modification will be integrated into the resource management plan and the allotment management plan.

Allotment management plans for allotments partially or entirely within designated wilderness will specifically identify the following:

(a) The use of motor vehicles, motorized equipment or other forms of mechanical equipment including: specific equipment, where it is to be used, when it is to be used, and what it is to be used for.

(b) Rangeland improvement structures and installations to be maintained, constructed, or reconstructed in achieving rangeland management objectives, including maintenance standards.

(c) The means to handle emergencies. In bonafide emergencies or urgent situations, decisions will be based on consideration of all relevant factors and use of good judgment.

d. **Rangeland Improvements.**

The following criteria should be considered in determining the use of motor vehicles, motorized equipment or mechanical transport in constructing, maintaining or applying rangeland improvements and practices.

(1) Minimizing threat to or loss of property.

(2) Minimum use of motorized equipment within wilderness.

(3) Develop and manage the rangeland resource in a cost-effective manner.

(4) Achieve least amount of impact by nonconforming uses on wilderness values through:

(a) Scheduling during periods of low use.

(b) Harmonizing improvements to surrounding landscape.

(c) Locate improvements to achieve maximum screening and fully utilize natural feature opportunities.

(5) Type of practice or construction material.

(6) Timeliness, including frequency and time of year.

(7) Need to deal with emergency or urgent situations that develop through acts of nature, such as drought, heavy snow.

(8) Location of nearest ranch facilities in relation to the project.

(9) Availability of primitive transport, e.g., team and wagon, saddle and pack stock, etc.

(10) Length of time to complete a project by alternative methods.

(11) Availability of temporary camp and feed sites.

(12) Age and health factors of permittee.

Documentation of the environmental analysis which considers the authorization of rangeland improvement construction and/or maintenance, and the use of motor vehicles, motorized equipment, and mechanical transport shall be made in an environmental assessment.

e. **Structural Rangeland Improvements**

Rangeland Improvement alternatives will be developed and evaluated through the environmental analysis process, including consultation with grazing permittees and other interested publics. Alternatives which utilize a practical and reasonable approach to meet rangeland and wilderness management objectives will be selected.

Permit modifications for the construction of new rangeland improvements or replacement of existing rangeland improvements will be made in accordance with BLM grazing regulations. Special consideration will be given to construction standards and techniques to achieve the most practical and reasonable approach considering the wilderness resource. Specific consideration will be given to:

- Costs of using natural materials.
- Alternative means of construction which harmonize to the extent possible with the wilderness resource.
- Use of motor vehicles, motorized equipment or mechanical transport needed for construction of improvements.

All rangeland improvements will be listed in the allotment management plan along with maintenance schedules.

(1) **Maintenance.**

The maintenance of existing necessary rangeland improvements may be allowed to continue. Those determined unnecessary through an environmental analysis will be phased out and removed on an agreed upon schedule.

The techniques by which maintenance of rangeland improvements and other related grazing activities are performed will require careful study, consideration of options, and a practical and reasonable solution. Existing use and requests for new use of motor vehicles, motorized equipment or other forms of mechanical transport, including emergencies, will be reviewed and congressional grazing guidelines applied. The occasional use of motor vehicles, motorized equipment or mechanical transport may be permitted where practical alternatives are not available.

The guidelines address occasional use of motor vehicles, motorized equipment, or mechanical transport where practical alternatives do not exist, with application only to those portions of a wilderness where they occurred prior to wilderness designation. It is important to look at all options and their impacts. Good judgment will be necessary in the decisionmaking process.

(2) **New Improvements.**

The construction of new rangeland improvements is permissible if determined to be necessary for the purpose of resource protection (rangeland and/or wilderness) and the effective management of these resources, rather than to accommodate increased numbers of livestock. The rangeland analysis may indicate that a reduction of use is necessary for rangeland protection, or new rangeland improvements are necessary for improved management or protection of wilderness values. New improvements will not be justified solely on the basis that they will aid intensive management resulting in increased grazing.

(3) **Types of Materials.**

When permitted, new or existing improvements should be of materials which harmonize with the wilderness character of the area to reduce the impact of artificial objects on the natural environment. Natural (native) materials for improvements will be used unless costs are unreasonable or they do not harmonize with the wilderness.

When replacement of an existing range improvement is contemplated, the following will be considered:

(a) The necessity of the rangeland improvement for livestock grazing operations, resource protection, or enhancement of wilderness values. Some improvements may no longer be needed or should be relocated. Existing rangeland improvements may be necessary for management of the rangeland and wilderness resources. Other alternatives for meeting needs will be explored.

(d) Design, location, and type of materials feasible to serve the purpose and yet be harmonious with natural features of the wilderness will be considered. A steel post and wire fence may be less obtrusive than native pole fence. A redwood water trough may be less noticeable than a steel one. A windmill may better harmonize with wilderness values than an earthen stock pond.

(c) Material and labor costs for natural materials vs. artificial materials. Good judgment, in

consultation with permittees, will provide the basis for determining what is reasonable for the permittee's livestock grazing operation and the particular wilderness values involved.

f. **Non-Structural Rangeland Improvements**

Non-structural rangeland improvement practices can be approved where they were part of the management at the time the wilderness was established and where their continuance is necessary to maintain livestock grazing operations. The need for non-structural rangeland improvements and practices will be carefully analyzed using the following criteria:

(1) **Seeding.**

The need for seeding will be carefully analyzed. Seeding will be approved only for:

(a) Areas where human activities have caused the loss or threaten the existence of indigenous species.

(b) Areas where human activities have denuded or caused loss of soil, providing the actions or activities responsible for the deterioration have been corrected and natural vegetation is insufficient and ineffective.

(c) Maintenance of livestock grazing operations where seeding was practiced prior to the designation of wilderness. Species seeded will be those that are native or naturalized to the area. Seed will be broadcast, except in special situations where other seeding methods are necessary.

(2) **Plant Control.**

Plant control will be approved only for:

(a) Native plants when needed to maintain livestock grazing operations where practiced prior to the designation of wilderness.

(b) Noxious farm weeds by grubbing or with chemicals when they threaten lands outside wilderness or are spreading within the wilderness, provided the control can be effected without serious adverse impacts on wilderness values.

(3) **Irrigation.**

Artificial irrigation or water spreading will be done only to maintain livestock grazing operations where practiced prior to the designation of wilderness.

(4) **Fertilizing.**

Fertilization may be used only as an aid to revegetation of disturbed areas approved in item (1) or to maintain livestock grazing operations where practiced prior to the designation of wilderness. Liming will be considered a fertilization practice.

(5) **Prescribed Burning.**

Prescribed burning will be approved for rangeland management purposes only where it was practiced prior to the designation of wilderness and is necessary to achieve maintenance of livestock grazing operations; such use must be approved in a fire management plan. (Prescribed burning may be permitted for other purposes, under guidelines in section III. D. 2. and III. E. 1 of this document, such as in cases where reestablishment of natural fire regimes is desired. Rangeland management objectives may be achieved through such prescribed burns and through management of natural fire as prescribed in fire management plans.)

2. **Recreational Livestock**

Commercial recreational livestock, such as that used by packers and outfitters, will be grazed under permit. Noncommercial recreational livestock may also be subject to permit when necessary for the administration or protection of the wilderness. All recreational livestock users, including commercial outfitters, will be required to pack in feed for their domestic animals when it is determined that adequate forage is not available within the area to be visited. The Wilderness Management Plan will analyze the need for regulations or restrictions relating to recreational saddle and pack stock; including, but not limited to, hobbling rather than tethering of horses, restrictive zoning, horse-party size limits, and use of native feed or pellets.

3. **Wild Horses and Burros**

The Wild Free-Roaming Horse and Burro Act of 1971 declares that wild horses and burros "...are to be considered in the area where presently found, as an integral part of the natural system of the public lands."

Viable, healthy populations of wild horses and burros will be maintained in wilderness areas at levels determined appropriate by the BLM planning system. Herd numbers and management techniques will not degrade, and will be compatible with preservation of, the area's wilderness character.

Herd Management Area Plans (HMAP's) will be developed in wilderness areas containing wild horses or burros. The plans will detail the present condition and potential of the herd and herd management area. The plans will describe management actions required to meet the wilderness objectives as well as the herd needs. The HMAP's will establish the habitat requirements and any necessary improvements; herd structure (sex and age ratios, etc.); methods of population manipulation and control (including removal, if necessary); migratory habits; and projections of population changes over time. Monitoring studies for the herd and its habitat will be an integral part of the plan. The HMAP's will describe the physical improvements necessary for maintenance of healthy, viable herds and their habitat.

Use of motorized and mechanical equipment, including aircraft; use, maintenance and type of material, and equipment such as temporary corrals; and the location, frequency, and timing of such uses will be specified in HMAP's and wilderness management plans. Such uses will be allowed when no other alternatives exist, they are the minimum necessary to accomplish the task, and they are the least degrading of wilderness values temporarily or permanently. Use of these facilities and equipment require State Director approval.

Environmental assessments will analyze the impacts of the management prescribed by the HMAP's, and alternatives and mitigating measures to minimize those impacts upon the wilderness resource.

III. I. Minerals Management

1. **Mining Law Administration**

The Wilderness Act of 1964 provides the basis for the minerals management policy to be followed in approving minerals exploration and development in designated wilderness areas. The Act recognizes the rights of the mining claimant under the mining laws and provides for prospecting and mining in wilderness while providing for protection of the wilderness resource. Under the Wilderness Act, the mining laws shall, to the same extent as applicable prior to the designation of an area as wilderness, apply until midnight December 31, 1983. Thereafter, subject to valid rights then existing, the lands are withdrawn from all forms of appropriation under the mining laws. Therefore, BLM's policy on mining operations on unpatented mining claims will comprise two categories: those operations occurring on or before midnight December 31, 1983, and those operations occurring after midnight December 31, 1983, which may proceed because they qualify as valid existing rights as of that date.

a. **Plans of Operations**

(1) Whether or not the operations occur before or after midnight December 31, 1983, an approved plan of operations called for by 43 CFR 3809 is required in all BLM-administered wilderness areas. The plan of operations will include all access, functions, work, facilities, and activities in connection with prospecting, development, extraction, and processing of mineral deposits and all other uses related to these activities whether on or off a mining claim. All BLM officials involved must ensure that provisions approved in operating plans protect the rights of the operator while minimizing the impact on the wilderness resource. Operators must be allowed to carry out operations that are necessary and reasonably incidental to the mining operation, but may not, in any circumstance, cause unnecessary or undue degradation. District Managers may call for the expertise of all necessary specialists to ensure that both the wilderness and the rights of the operator are adequately and properly served.

Before approving the plan the BLM may assist the operator in selecting the most appropriate means and type of access and access route. The final approved access must be that which creates the least lasting impact on the wilderness resource, while still reasonably serving the needs of the operator.

Those activities otherwise generally prohibited in wilderness, including the use of mechanical transport, motorized equipment, or aircraft, shall be authorized only when there is no reasonable alternative. An approved operating plan will serve as authorization for such otherwise prohibited activities on mining claims within wilderness.

Casual use permissible in wilderness areas consists of operations resulting in only negligible disturbance to wilderness resources and not involving the use of mechanical or motorized equipment, landing of aircraft, or explosives. Examples of casual use would be: access by foot or horseback, or overflights to conduct magnetic surveys. Flights used to transport equipment or personnel into and out of the wilderness will not be considered as casual use. An approved plan of operations is not required for casual use.

(2) Contents of a plan of operations and plan approval procedures shall comply with the 43 CFR 3809 regulations. The following criteria shall also be satisfied:

(a) **Operations Prior to Midnight December 31, 1983.**

Until this deadline, lands within wilderness areas are open to appropriation under the mining laws to the same extent as before wilderness designation. In other words, claim staking, prospecting, exploration, development, and patenting may occur. Before approving operations submitted in a plan of operations during this time, the District Manager shall be satisfied that:

i. There will be no unnecessary or undue degradation of wilderness character.

ii. If mechanical or motorized equipment, including helicopter and fixed wing aircraft (beyond casual use), will be used, there is no reasonable alternative.

iii. The reclamation measures included in the plan of operations are adequate to provide for restoration as near as practicable of the surface of the land disturbed.

Any disapproval or denial of a plan of operations by the authorized officer is subject to appeal by the operator under the provisions of 43 CFR 3809.4.

(b) **Operations After December 31, 1983**

Development work, extraction, and patenting will be allowed to continue after midnight December 31, 1983, only on valid claims located on or before that date. After that date, prospecting and exploration work under the mining laws will not be allowed, as the right to continue those kinds of operations terminated on midnight December 31, 1983.

Prior to approving plans submitted after December 31, 1983, for operations on claims, or allowing operations to continue that had been approved prior to midnight December 31, 1983, the District Manager shall cause an examination of the unpatented claim(s) by a BLM minerals examiner to verify whether or not a valid claim exists. Operations on producing mines will be allowed to continue pending determination of valid existing rights. The minerals examination and subsequent minerals report must confirm that as of midnight December 31, 1983, minerals had been found and the evidence is of such a character that a person of ordinary prudence would be justified in the further expenditure of his labor and means, with a reasonable prospect of success in developing a valuable mine. Any disapproval or denial of a plan of operations by the authorized officer is subject to appeal by the operator under the provisions of 43 CFR 3809.4.

Before approving a plan of operations applicable after December 31, 1983, the District Manager shall be satisfied that:

i. There will be no unnecessary or undue degradation of wilderness character.

ii. If mechanical or motorized equipment, including helicopter and fixed wing aircraft (beyond casual use), will be used, there is no reasonable alternative.

iii. The reclamation measures included in the plan of operations are adequate to provide for restoration as near as practicable of the surface of the land disturbed.

(c) **Timber**--Timber determined necessary for removal to facilitate mining activities will be cut following principles of sound forest management and in such a manner as to minimize lasting evidence of its removal. Individual trees will be carefully selected so as not to make obvious artificial openings. Stumps will be cut as close to the ground as practical.

(d) **Fire**--The operator will be required to keep spark arresters and fire extinguishers on all internal combustion engines during periods of fire danger. The operator will generally be required to maintain caches of handtools in sufficient quantities to equip those personnel expected to be on the operation. The operator and his personnel will be expected to take initial action on any fire in the vicinity of the operation.

Slash and other flammable debris will generally require complete disposal to reduce fire hazard, prevent insect buildup, and more rapidly reduce evidence of the timber cutting. If burning is performed it will be in accordance with a prescribed burn plan that establishes fire and resource management objectives. Burning will be performed at a time approved by the BLM District Manager.

(e) **Site Reclamation**—The reclamation of the site and other disturbed areas will vary with the location, type of soil erosion hazard, type of vegetative cover, and type and extent of disturbance. As a minimum, all sites will be treated in such a manner that they will not cause accelerated erosion, siltation of streams, a hazard to wilderness visitors, or unnecessary or undue degradation of the land. Also, as a minimum, all excavations with vertical cuts in soil will be sloped to a stable angle of repose. Generally, hand-dug pits or shafts with the excavated material still at hand will be refilled. Here, as with timber cutting, the main objective will be to minimize remaining evidence of human activities. It may not be practical to return an area to its original contour, but it will generally be entirely reasonable to return it to a contour which might appear to be natural. An effort will be made when practical and reasonable to put topsoil equal in quality to that which was removed over disturbed soil surfaces to promote natural revegetation or to aid in seeding. Where native seed is available and its use is reasonable, disturbed areas will be seeded to native plant species provided the area originally supported such vegetation.

(f) **Structures and Improvements**—Plans of operations shall identify all structures and improvements planned as an adjunct to the operation. The plan will also show the ultimate disposition of the improvements and when this will occur. The objective will be to ensure the removal of all works or improvements when they are no longer needed for the prospect or future mining.

(g) **Unnecessary or Undue Degradation**—A plan of operations shall include measures to be taken to prevent unnecessary or undue degradation of the area resulting from the proposed operation. This may require measures to prevent water pollution through contamination or siltation of streams while the operation is in progress and to leave the site in such a condition that a vegetative cover can be reestablished when the operation is abandoned. Such measures may include trenching of disturbed slopes, placing retaining walls to prevent tailings from entering stream channels, etc. It may also require the scalping and stockpiling of the topsoil or sod from the area to be disturbed so that it might be spread over the surface to aid in reestablishing vegetation. Air and noise pollution are also critical elements. Plans shall identify mitigating measures to minimize noise and air pollution.

b. Performance Bond

No bond shall be required for operations considered as casual use. A bond may be required for any operator who conducts operations under an approved plan of operations. The primary purpose for a bond is to ensure compliance with the plan of operations. Requirement for posting a bond is at the discretion of the authorized officer.

c. Environmental Assessment

Operating plans for prospecting and mining activities will normally involve surface disturbance of the wilderness resource and will require an environmental assessment which considers the impact of the proposed operation on the lands and all feasible alternatives for complying with the rights of the claimant. Upon completion of the analysis, the District Manager will determine if no environmental impact statement is needed. The State Director's approval is required for preparation of an environmental impact statement.

2. Mineral Leasing

Section 4(d)(3) of the Wilderness Act of 1964 prescribes that mineral exploration and development will continue in designated wilderness areas by stating "until midnight December 31, 1983, the United States mining laws and all laws pertaining to mineral leasing shall, to the same extent as applicable prior to the effective date of this Act, extend to those . . . lands designated by this Act as 'wilderness areas'".

Designation of an area as wilderness may not be the basis for denying a mineral lease, permit, or license. Mineral leasing applications will be evaluated through the environmental assessment process. A State Director's determination to deny an application must be based upon background data and facts of record indicating the public interest would be better served by the rejection so as to protect other resource values. Wilderness character may be taken into account when making mineral leasing decisions, but leases or permits may not be denied solely on the basis of a desire to protect wilderness character. Leases, permits, or licenses issued after an area is designated as wilderness and prior to midnight December 31, 1983, must contain reasonable stipulations for the protection of the wilderness character of the land consistent with the use of the lands for the purposes for which they are leased, permitted, or licensed.

Mineral leases, permits, or licenses confer certain rights upon individuals to conduct certain activities upon the public lands. Regulations imposed on existing lessees, permittees, or licensees must be reasonable and consistent with the continued use of the lands for the purposes for which the leases, permits or licenses were issued.

Geothermal leasing is within the scope of the "laws pertaining to mineral leasing" in section 4(d)(3) of the Wilderness Act. Designated wilderness areas will remain available for geothermal leasing to the same extent they were at the time of designation, and the above guidelines on mineral leasing will apply.

3. Mineral Patents

A patent conveying both surface and mineral rights may be issued on a valid claim located *prior* to the date the area was included as a part of the National Wilderness Preservation System and prior to midnight December 31, 1983.

Mining locations shall be held and used solely for mining. For a valid claim located *after* the date an area is established as wilderness and prior to midnight December 31, 1983, the patent conveys title to mineral rights only. The patentee may cut and use so much of the mature timber from the claim as may be needed in the extraction, removal, and beneficiation of the mineral deposits, if the timber is not otherwise reasonably available. All timber shall be cut under sound principles of forest management. All surface rights are reserved to the United States. Except as specifically provided in the Wilderness Act or the act designating the area as wilderness, no use of the surface of the claim or its resources not reasonably required for carrying on mining or prospecting shall be allowed.

No patent shall issue after December 31, 1983, except for the valid claims existing on or before midnight December 31, 1983.

Once a claim has been patented it becomes private land or interest in lands. Access will then not be governed by a plan of operations, but under the policy in section III. B. 5. j.

4. Common Varieties of Mineral Materials

Permits to remove such materials will not be issued.

5. Paleontological Resources

To the extent not inconsistent with the concept of wilderness preservation and the intent of the Wilderness Act, paleontological resources are available for recreational, scenic, scientific, educational, conservation, and historical uses. Paleontological resources, in most instances, will be subject to the forces of nature in the same manner as other wilderness resources. Study or management will not normally include any excavation, stabilization, or interpretation activities. Salvage of paleontological sites, excavation, and collection of artifacts may be permitted on a case-by-case basis where the project will not degrade the overall wilderness character of the area and such activity is needed to preserve the particular resource. State Director approval is required for all such projects.

III. J. Administrative Structures and Facilities

1. Administrative Sites

Existing administrative sites will be limited to the existing structures or their replacement with similar structures of compatible design provided their continued use is necessary to meet minimum requirements for the administration of the area. Tents will usually be used to supplement housing and kitchen demands brought about by special projects and expanding workloads. As maintenance becomes impractical, first consideration will be given to eliminating the site. Replacement of facilities will require the Director's approval. The Wilderness Management Plan will address the need for existing sites. No new sites will be planned unless they are the minimum necessary for management of the area as wilderness.

2. Fences

Corrals and fences for the control of administrative pack and saddle stock may be built only at administrative sites where the animals are regularly used for periods of more than a few days' duration. New permanent fences shall be constructed of materials compatible with the particular wilderness. The Wilderness Management Plan will consider the need for, location of, and material to be used in administrative fence construction.

3. Trails

Trails for administrative purposes may be constructed when they are the minimum necessary for the preservation of the wilderness resource and have been authorized in the Wilderness Management Plan. (Trails and associated structures for visitor use are discussed as part of the specific guidance under Recreation and Visitor Use, section III. A. of this document.)

4. Airfields

New airfields, including emergency airstrips, shall not be located in BLM-administered wilderness. The Wilderness Management Plan shall review existing airstrips and determine whether or not to permit the continued use of existing airfields. Such use will be monitored on a regular basis to determine if its continuation is appropriate. Use may be restricted when necessary to protect wilderness resources, such as wildlife values during nesting season. If use is approved, maintenance will generally be by primitive, non-motorized equipment only.

5. Heliports and Helispots

a. Heliports

Heliports may be constructed and maintained at existing administrative sites where they are the minimum necessary for wilderness purposes. Complete justification for continuing heliports or constructing new ones will be required. Unless otherwise approved by the Director, other heliports shall not be located within wilderness areas. The Wilderness Management Plan will fully evaluate the need for heliports. Only those heliports considered the minimum necessary for wilderness resource management will be continued.

b. Helispots

State Directors may approve construction of individual helispots or systems of helispots when they are the minimum necessary for administration or protection of the area as wilderness. The Wilderness Management Plan will fully evaluate helispot needs. Except for emergencies, helispot construction is prohibited if not specifically identified in the Wilderness Management Plan.

6. Communication Facilities

Communication facilities will be constructed and maintained only when they are the minimum necessary for administration and protection of the area as wilderness. The Wilderness Management Plan will fully evaluate the need for existing and proposed sites and their maintenance. Facilities should blend with the natural environment.

7. Structures and Facilities Constructed, Used or Proposed by Other Agencies

Other agencies conducting activities within BLM wilderness shall be equally constrained by provisions of the Wilderness Act that are applicable to the BLM. These guidelines will apply:

a. Authorized structures, installations, or facilities used by other agencies shall be reviewed periodically to determine whether their continued existence is essential for meeting the minimum requirements for administration of the area as wilderness. If it is not, the authorization shall be terminated and the improvement removed. The Wilderness Management Plan will assess and determine the disposition of all such improvements.

b. When existing improvements deteriorate to the point that normal maintenance will not suffice to keep them usable, the necessity for such improvements shall be critically analyzed. If they are not essential to meet the minimum requirements of administration of the wilderness, or essential to a continuing program that was established on the basis of the structure, they shall not be replaced. Permits for new improvements or replacement of existing improvements must be approved by the Director.

c. The maintenance or replacement of existing signs, instruments, and other improvements of a minor nature, used in connection with such projects as snow surveys, water measurement, game and fish management, and geological studies may be approved by the State Director. New installations may be approved if they are essential to meet the minimum requirements for administration of the wilderness for the purposes of the Wilderness Act.

III. K. Use of Motorized and Mechanical Equipment

Travel within a BLM-administered wilderness will normally be by non-motorized, non-mechanical means consistent with the preservation of wilderness character.

The wilderness management plan will specify the instances and places in which administrative use of mechanized equipment, mechanical transport, or aircraft is the minimum necessary to protect and administer the wilderness resource or is necessary as part of a nonconforming, but accepted, use. When approved, that equipment which is the minimum necessary to accomplish the task with the least lasting and damaging impact on the wilderness resource will be selected. Such motorized and mechanical equipment use will be scheduled at times and locations which will have the least impact on the visitors' wilderness experience.

Conditions under which use may be allowed (unless otherwise stated, all use is subject to the standards spelled out in the preceding paragraph) are:

1. The public use of aircraft or motorboats, where these uses were established prior to the area's designation as wilderness, may be permitted to continue. Wilderness Management Plans will assure periodic review of such use to determine if its continuation is necessary and impacts on the area's wilderness character are minimized.

2. Motorized and mechanical equipment use may be authorized for mining or prospecting purposes if approved in a Plan of Operation or in association with valid existing rights. Refer to specific guidance for Minerals Management in section III. I.

3. The use of motor vehicles, motorized equipment, and mechanical transport may be approved for certain situations involving established livestock grazing operations. Refer to specific guidance for Rangeland Management in section III. H.

4. Motorized equipment and mechanical transport use may be allowed when an emergency condition exists which involves the health and safety of visitors. The District Manager (or Area Manager, if delegated) may approve such action.

5. Motorized equipment and mechanical transport may be permitted during a fire suppression emergency. Impacts resulting from overland vehicle travel (either cross-country travel or temporary road construction) and impacts from equipment use will be obliterated and rehabilitated in a manner which permits the wilderness resource an opportunity to heal rapidly. Motorized equipment and mechanical transport uses will be specifically addressed in a wilderness area's Fire Management Plan. The District Manager (or Area Manager, if delegated) may approve such action. Refer to specific guidance for Fire Management.

6. The use of aircraft may be allowed in nonemergency situations to deliver supplies or materials to construct or maintain improvements needed for administration of the area as wilderness when use of pack and saddle stock or other non-mechanized means is not feasible. Approval must be authorized by the State Director.

7. Powered hand-portable tools, such as chain saws or rock drills, may be approved by the State Director when they are the minimum necessary for administrative purposes where work cannot be accomplished with nonpowered tools. (In some cases, such tools may be necessary in trail construction and maintenance, due to limitations of time, season, etc.)

8. Mechanized or motorized equipment may be used for wilderness research, other wilderness-enhancing purposes where no other alternatives exist and where such use is the minimum necessary for administration of the area as wilderness and will not degrade the area's wilderness character. Instances could include wildlife transplants or fish stocking by State Divisions of Wildlife. State Director approval is required. (Refer also to specific guidance for Research and Studies.)

9. Mechanized or motorized equipment may be used in gathering information about resources, so long as the use is compatible with preservation of the wilderness environment. Instances could include mineral surveys by the U.S. Geological Survey or water resource investigations. State Director approval is required.

10. Where feasible, control of insects and disease will be conducted without use of motorized equipment. Otherwise, aircraft use is permissible without landing of aircraft. Approval must be authorized by the State Director on a case-by-case basis.

11. Motorized equipment necessary to meet temporary emergencies involving violations of criminal law and/or including the pursuit of fugitives may be approved by the District Manager (or Area Manager, if delegated).

12. There is no specific prohibition of overflight of wilderness by aircraft. Low-flying aircraft cause disturbance of the solitude of an area. Except in bona fide emergencies, such as search and rescue efforts and essential military missions, low flight should be discouraged. Where low overflight is a problem, or expected to become a problem, wilderness management plans will provide for liaison with proper military authorities, the Federal Aviation Administration, and contact with pilots in the general area in an effort to reduce low flight.

III. L. Research and Studies

Research is a valid and important use of the wilderness resource. Research will be permitted and encouraged as long as all projects are conducted in such a manner as to preserve the area's wilderness character and they further the management, scientific, educational, historical, and conservation purposes of the area.

Research will be conducted or supported to evaluate the effectiveness in achieving objectives of ongoing wilderness management. Research will also be encouraged to identify problems and improve management techniques to increase efforts to further the purposes of the Wilderness Act.

Research and studies to investigate scientific values may also be conducted in wilderness provided that wilderness is essential to results of such research, and wilderness values would not be jeopardized.

Research and other studies will be conducted without use of motorized equipment or construction of temporary or permanent structures. Exceptions to this policy may be approved by the State Director for projects that are essential to management of the specific wilderness when no other feasible alternatives exist. Such use, when approved, must be the minimum necessary and must not degrade the area's wilderness character.

Chapter IV. Implementation of the Wilderness Management Policy

This chapter explains how the BLM will implement the Wilderness Management Policy through the process of developing a plan for each wilderness area under its administration.

The purpose of the Wilderness Management Plan (WMP) is to describe the management strategy that will be used to work toward attainment of the objectives of the Wilderness Management Policy. The plan must clearly show the actions that will be taken to preserve the wilderness resource, and the linkage between these actions and the objectives.

Each WMP will address the management situation present in an individual wilderness area or in two or more closely related areas. Plans should reflect the different kinds of environmental settings, history of use, and management situations found in individual areas within the framework of this policy.

Public involvement must be included in the development of each WMP. A minimum of at least one meeting or workshop must be open to the general public, and the public must be given at least 45 days to comment upon the proposed Wilderness Management Plan. Issues, questions, and problems raised by the public will be considered during the development of the final WMP. The WMP's will be updated on a regular basis or as conditions change. The public will be given the opportunity to be involved in plan changes.

The Wilderness Management Plan will include the general policy for all BLM wilderness areas. Additions may be made to tailor the policy to the current management situation for each area. Selected statements from the Wilderness Management Policy may be included to show the connection between actions proposed in the Plan and the objectives found in the management policy. Other policy statements may be included where appropriate, so long as they do not conflict with the Wilderness Management Policy.

During the time period before a WMP is prepared for a wilderness area, the Wilderness Management Policy will guide the conduct of day-to-day activities. The approval of activities, programs, or projects initiated by the Bureau of Land Management, other governmental bodies, or private individuals will be contingent upon the completion of an environmental assessment. Proposals determined to be inconsistent with the intent of the Wilderness Management Policy or other elements of the BLM's legislative and regulatory mandate will be modified or disapproved, as appropriate.

Upon completion of the WMP for an area, the viability of activities, programs, or projects will be determined through the BLM's environmental assessment process. If the proposed action is part of an approved WMP, the environmental assessment will consider if it is the best way to meet objectives of the plan from an on-the-ground perspective and if the action conforms to other applicable elements of the BLM's legislative and regulatory mandate. If the proposal is not part of the WMP, the environmental assessment will be used also to determine if it is in conformance with the WMP. Proposals found to be inconsistent with the WMP or other applicable BLM guidance will be modified or disapproved, as appropriate.

The BLM will issue any regulations necessary to manage visitor use and other problems peculiar to a particular wilderness area. Regulations might cover such topics as camping, river running, use of firewood, etc. Managers should use the minimum amount of regulation necessary, but should not hesitate when a problem calls for them.

Specific guidance regarding the procedure for developing Wilderness Management Plans will be issued to BLM field offices after issuance of the final Wilderness Management Policy.

APPENDIX A

Section 603 of
THE FEDERAL LAND POLICY AND MANAGEMENT ACT OF 1976
(P.L. 94-579)

Sec. 603. (a) Within fifteen years after the date of approval of this Act, the Secretary shall review those roadless areas of five thousand acres or more and roadless islands of the public lands, identified during the inventory required by section 201(a) of this Act as having wilderness characteristics described in the Wilderness Act of September 3, 1964 (78 Stat. 890; 16 U.S.C. 1131 et seq.) and shall from time to time report to the President his recommendation as to the suitability or nonsuitability of each such area or island for preservation as wilderness: *Provided*, That prior to any recommendations for the designation of an area as wilderness the Secretary shall cause mineral surveys to be conducted by the Geological Survey and the Bureau of Mines to determine the mineral values, if any, that may be present in such areas: *Provided further*, That the Secretary shall report to the President by July 1, 1980, his recommendations on those areas which the Secretary has prior to November 1, 1975, formally identified as natural or primitive areas. The review required by this subsection shall be conducted in accordance with the procedures specified in section 3(d) of the Wilderness Act.

(b) The President shall advise the President of the Senate and the Speaker of the House of Representatives of his recommendations with respect to designation as wilderness of each such area, together with a map thereof and a definition of its boundaries. Such advice by the President shall be given within two years of the receipt of each report from the Secretary. A recommendation of the President for designation as wilderness shall become effective only if so provided by an Act of Congress.

(c) During the period of review of such areas and until Congress has determined otherwise, the Secretary shall continue to manage such lands according to his authority under this Act and other applicable law in a manner so as not to impair the suitability of such areas for preservation as wilderness, subject, however, to the continuation of existing mining and grazing uses and mineral leasing in the manner and degree in which the same was being conducted on the date of approval of this Act: *Provided*, That, in managing the public lands the Secretary shall by regulation or otherwise take any action required to prevent unnecessary or undue degradation of the lands and their resources or to afford environmental protection. Unless previously withdrawn from appropriation under the mining laws, such lands shall continue to be subject to such appropriation during the period of review unless withdrawn by the Secretary under the procedures of section 204 of this Act for reasons other than preservation of their wilderness character. Once an area has been designated for preservation as wilderness, the provisions of the Wilderness Act which apply to national forest wilderness areas shall apply with respect to the administration and use of such designated area, including mineral surveys required by section 4(d)(2) of the Wilderness Act, and mineral development, access, exchange of lands, and ingress and egress for mining claimants and occupants.

APPENDIX B

THE WILDERNESS ACT OF SEPTEMBER 3, 1964

Public Law 88-577
88th Congress, S. 4

AN ACT

To establish a National Wilderness Preservation System for the permanent good of the whole people, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SHORT TITLE

Section 1. This Act may be cited as the "Wilderness Act".

WILDERNESS SYSTEM ESTABLISHED— STATEMENT OF POLICY

Section 2.(a) In order to assure that an increasing population, accompanied by expanding settlement and growing mechanization, does not occupy and modify all areas within the United States and its possessions, leaving no lands designated for preservation and protection in their natural condition, it is hereby declared to be the policy of the Congress to secure for the American people of present and future generations the benefits of an enduring resource of wilderness. For this purpose there is hereby established a National Wilderness Preservation System to be composed of federally owned areas designated by Congress as "wilderness areas", and these shall be administered for the use and enjoyment of the American people in such manner as will leave them unimpaired for future use and enjoyment as wilderness, and so as to provide for the protection of these areas, the preservation of their wilderness character, and for the gathering and dissemination of information regarding their use and enjoyment as wilderness; and no Federal lands shall be designated as "wilderness areas" except as provided for in this Act or by a subsequent Act.

(b) The inclusion of an area in the National Wilderness Preservation System notwithstanding, the area shall continue to be managed by the Department and agency having jurisdiction thereover immediately before its inclusion in the National Wilderness Preservation System unless otherwise provided by Act of Congress. No appropriation shall be available for the payment of expenses or salaries for the administration of the National Wilderness Preservation System as a separate unit nor shall any appropriations be available for additional personnel stated as being required solely for the purpose of managing or administering areas solely because they are included within the National Wilderness Preservation System.

DEFINITION OF WILDERNESS

(c) A wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain. An area of wilderness is further defined to mean in this Act an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value.

NATIONAL WILDERNESS PRESERVATION SYSTEM—EXTENT OF SYSTEM

Section 3.(a) All areas within the national forests classified at least 30 days before the effective date of this Act by the Secretary of Agriculture or the Chief of the Forest Service as "wilderness", "wild", or "canoe" are hereby designated as wilderness areas. The Secretary of Agriculture shall—

(1) Within one year after the effective date of this Act, file a map and legal description of each wilderness area with the Interior and Insular Affairs Committees of the United States Senate and the House of Representatives, and such descriptions shall have the same force and effect as if included in this Act: *Provided, however*, That correction of clerical and typographical errors in such legal descriptions and maps may be made.

(2) Maintain, available to the public, records pertaining to said wilderness areas, including maps and legal descriptions, copies of regulations governing them, copies of public notices of, and reports submitted to Congress regarding pending additions, eliminations, or modifications. Maps, legal descriptions, and regulations pertaining to wilderness areas within their respective jurisdictions also shall be available to the public in the offices of regional foresters, national forest supervisors, and forest rangers.

Classification. (b) The Secretary of Agriculture shall, within ten years after the enactment of this Act, review, as to its suitability or nonsuitability for preservation as wilderness, each area in the national forests classified on the effective date of this Act by the Secretary of Agriculture or the Chief of the Forest Service as "primitive" and report his findings to the President.

Presidential recommendation to Congress. The President shall advise the United States Senate and House of Representatives of his recommendations with respect to the designation as "wilderness" or other reclassification of each area on which review has been completed, together with maps and a definition of boundaries. Such advice shall be given with respect to not less than one-third of all the areas now classified as "primitive" within three years after the enactment of this Act, not less than two-thirds within seven years after the enactment of this Act, and the remaining areas within ten years after the enactment of this Act.

Congressional approval. Each recommendation of the President for designation as "wilderness" shall become effective only if so provided by an Act of Congress. Areas classified as "primitive" on the effective date of this Act shall continue to be administered under the rules and regulations affecting such areas on the effective date of this Act until Congress has determined otherwise. Any such area may be increased in size by the President at the time he submits his recommendations to the Congress by not more than five thousand acres with no more than one thousand two hundred and eighty acres of such increase in any one compact unit; if it is proposed to increase the size of any such area by more than five thousand acres or by more than one thousand two hundred and eighty acres in any one compact unit the increase in size shall not become effective until acted upon by Congress. Nothing herein contained shall limit the President in proposing, as part of his recommendations to Congress, the alteration of existing boundaries of primitive areas or recommending the addition of any contiguous area of national forest lands predominantly of wilderness value. Notwithstanding any other provisions of this Act, the Secretary of Agriculture may complete his review and delete such areas as may be necessary, but not to exceed seven thousand acres, from the southern tip of the Gore Range-Eagles Nest Primitive Area, Colorado, if the Secretary determines that such action is in the public interest.

Report to President. (c) Within ten years after the effective date of this Act the Secretary of the Interior shall review every roadless area of five thousand contiguous acres or more in the national parks, monuments and other units of the national park system and every such area of, and every roadless island within, the national wildlife refuges and game ranges, under his jurisdiction on the effective date of this Act and shall report to the President his recommendation as to the suitability or nonsuitability of each such area or island for preservation as wilderness.

Presidential recommendation to Congress. The President shall advise the President of the Senate and the Speaker of the House of Representatives of his recommendation with respect to the designation as wilderness of each such area or island on which review has been completed, together with a map thereof and a definition of its boundaries. Such advice shall be given with respect to not less than one-third of the areas and islands to be reviewed under this subsection within three years after enactment of this Act, not less than two-thirds within seven years of enactment of this Act, and the remainder within ten years of enactment of this Act.

Congressional approval. A recommendation of the President for designation as wilderness shall become effective only if so provided by an Act of Congress. Nothing contained herein shall, by implication or otherwise, be construed to lessen the present statutory authority of the Secretary of the Interior with respect to the maintenance of roadless areas within units of the national park system.

Suitability. (d)(1) The Secretary of Agriculture and the Secretary of the Interior shall, prior to submitting any recommendations to the President with respect to the suitability of any area for preservation as wilderness—

Publication in Federal Register. (A) give such public notice of the proposed action as they deem appropriate, including publication in the Federal Register and in a newspaper having general circulation in the area or areas in the vicinity of the affected land;

Hearings. (B) hold a public hearing or hearings at a location or locations convenient to the area affected. The hearings shall be announced through such means as the respective Secretaries involved deem appropriate, including notices in the Federal Register and in newspapers of general circulation in the area: *Provided*, That if the lands involved are located in more than one State, at least one hearing shall be held in each State in which a portion of the land lies;

(C) at least thirty days before the date of a hearing advise the Governor of each State and the governing board of each county, or in Alaska the borough, in which the lands are located, and Federal departments and agencies concerned, and invite such officials and Federal agencies to submit their views on the proposed action at the hearing or by no later than thirty days following the date of the hearing.

(2) Any views submitted to the appropriate Secretary under the provisions of (1) of this subsection with respect to any area shall be included with any recommendations to the President and to Congress with respect to such area.

Proposed modification. (e) Any modification or adjustment of boundaries of any wilderness area shall be recommended by the appropriate Secretary after public notice of such proposal and public hearing or hearings as provided in subsection (d) of this section. The proposed modification or adjustment shall then be recommended with map and description thereof to the President. The President shall advise the United States Senate and the House of Representatives of his recommendations with respect to such modification or adjustment and such recommendations shall become effective only in the same manner as provided for in subsections (b) and (c) of this section.

USE OF WILDERNESS AREAS

Section 4. (a) The purposes of this Act are hereby declared to be within and supplemental to the purposes for which national forests and units of the national park and national wildlife refuge systems are established and administered and—

(1) Nothing in this Act shall be deemed to be in interference with the purpose for which national forests are established as set forth in the Act of June 4, 1897 (30 Stat. 11), and the Multiple-Use Sustained-Yield Act of June 12, 1960 (74 Stat. 215).

(2) Nothing in this Act shall modify the restrictions and provisions of the Shipstead-Nolan Act (Public Law 539, Seventy-first Congress, July 10, 1930; 46 Stat. 1020), the Thye-Blatnik Act (Public Law 733, Eightieth Congress, June 22, 1948; 62 Stat. 568), and the Humphrey-Thye-Blatnik-Andresen Act (Public Law 607, Eighty-fourth Congress, June 22, 1956; 70 Stat. 326), as applying to the Superior National Forest or the regulations of the Secretary of Agriculture.

(3) Nothing in this Act shall modify the statutory authority under which units of the national park system are created. Further, the designation of any area of any park, monument, or other unit of the national park system as a wilderness area pursuant to this Act shall in no manner lower the standards evolved for the use and preservation of such park, monument, or other unit of the national park system in accordance with the Act of August 25, 1916, the statutory authority under which the area was created, or any other Act of Congress which might pertain to or affect such area, including, but not limited to, the Act of June 8, 1906 (34 Stat. 225; 16 U.S.C. 432 et seq.); section 3 (2) of the Federal Power Act (16 U.S.C. 796 (2)); and the Act of August 21, 1935 (49 Stat. 666; 16 U.S.C. 461 et seq.).

(b) Except as otherwise provided in this Act, each agency administering any area designated as wilderness shall be responsible for preserving the wilderness character of the area and shall so administer such area for such other purposes for which it may have been established as also to preserve its wilderness character. Except as otherwise provided in this Act, wilderness areas shall be devoted to the public purposes of recreational, scenic, scientific, educational, conservation, and historical use.

PROHIBITION OF CERTAIN USES

(c) Except as specifically provided for in this Act, and subject to existing private rights, there shall be no commercial

enterprise and no permanent road within any wilderness area designated by this Act and, except as necessary to meet minimum requirements for the administration of the area for the purpose of this Act (including measures required in emergencies involving the health and safety of persons within the area), there shall be no temporary road, no use of motor vehicles, motorized equipment or motorboats, no landing of aircraft, no other form of mechanical transport, and no structure or installation within any such area.

SPECIAL PROVISIONS

(d) The following special provisions are hereby made:

(1) Within wilderness areas designated by this Act the use of aircraft or motorboats, where these uses have already become established, may be permitted to continue subject to such restrictions as the Secretary of Agriculture deems desirable. In addition, such measures may be taken as may be necessary in the control of fire, insects, and diseases, subject to such conditions as the Secretary deems desirable.

(2) Nothing in this Act shall prevent within national forest wilderness areas any activity, including prospecting, for the purpose of gathering information about mineral or other resources, if such activity is carried on in a manner compatible with the preservation of the wilderness environment. Furthermore, in accordance with such program as the Secretary of the Interior shall develop and conduct in consultation with the Secretary of Agriculture, such areas shall be surveyed on a planned, recurring basis consistent with the concept of wilderness preservation by the Geological Survey and the Bureau of Mines to determine the mineral values, if any, that may be present; and the results of such surveys shall be made available to the public and submitted to the President and Congress.

Mineral leases, claims, etc. (3) Notwithstanding any other provisions of this Act, until midnight December 31, 1983, the United States mining laws and all laws pertaining to mineral leasing shall, to the same extent as applicable prior to the effective date of this Act, extend to those national forest lands designated by this Act as "wilderness areas"; subject, however, to such reasonable regulations governing ingress and egress as may be prescribed by the Secretary of Agriculture consistent with the use of the land for mineral location and development and exploration, drilling, and production, and use of land for transmission lines, waterlines, telephone lines, or facilities necessary in exploring, drilling, producing, mining, and processing operations, including where essential the use of mechanized ground or air equipment and restoration as near as practicable of the surface of the land disturbed in performing prospecting, location, and, in oil and gas leasing, discovery work, exploration, drilling, and production, as soon as they have served their purpose. Mining locations lying within the boundaries of said wilderness areas shall be held and used solely for mining or processing operations and uses reasonably incident thereto; and hereafter, subject to valid existing rights, all patents issued under the mining laws of the United States affecting national forest lands designated by this Act as wilderness areas shall convey title to the mineral deposits within the claim, together with the right to cut and use so much of the mature timber therefrom as may be needed in the extraction removal and beneficiation of the mineral deposits, if needed timber is not otherwise reasonably available, and if the timber is cut under sound principles of forest management as defined by the national forest rules and regulations, but each such patent shall reserve to the United States all title in or to the surface of the lands and products thereof, and no use of the surface of the claim or the resources therefrom not reasonably required for carrying on mining or prospecting shall be allowed except as otherwise expressly provided in this Act: *Provided*, That, unless hereafter specifically authorized, no patent within wilderness areas designated by this Act shall issue after December 31, 1983, except for the valid claims existing on or before December 31, 1983. Mining claims located after the effective date of this Act within the boundaries of wilderness areas designated by this Act shall create no rights in excess of those rights which may be patented under the provisions of this subsection. Mineral leases, permits, and licenses covering lands within national forest wilderness areas designated by this Act shall contain such reasonable stipulations as may be prescribed by the Secretary of Agriculture for the protection of the wilderness character of the land consistent with the use of the land for the purposes for which they are leased, permitted, or licensed. Subject to valid rights then existing, effective January 1, 1984, the minerals in lands designated by this Act as wilderness areas are withdrawn from all forms of appropriation under the mining laws and from disposition under all laws pertaining to mineral leasing and all amendments thereto.

Water resources. (4) Within wilderness areas in the national forests designated by this Act, (1) the President may, within a specific area and in accordance with such regulations as he may deem desirable, authorize prospecting for water resources, the establishment and maintenance of reservoirs, water-conservation works, power projects, transmission lines, and other facilities needed in the public interest, including the road construction and maintenance essential to development and use thereof, upon his determination that such use or uses in the specific area will better serve the interests of the United States and the people thereof than will its denial; and (2) the grazing of livestock, where established prior to the effective date of this Act, shall be permitted to continue subject to such reasonable regulations as are deemed necessary by the Secretary of Agriculture.

(5) Other provisions of this Act to the contrary notwithstanding, the management of the Boundary Waters Canoe Area, formerly designated as the Superior, Little Indian Sioux, and Caribou Roadless Areas, in the Superior National Forest, Minnesota, shall be in accordance with regulations established by the Secretary of Agriculture in accordance with the general prupose of maintaining, without unnecessary restrictions on other uses, including that of timber, the primitive character of the area, particularly in the vicinity of lakes, streams, and portages: *Provided*, That nothing in this Act shall preclude the continuance within the area of any already established use of motorboats.

(6) Commercial services may be performed within the wilderness areas designated by this Act to the extent necessary for activities which are proper for realizing the recreational or other wilderness purposes of the areas.

(7) Nothing in this Act shall constitute an express or implied claim or denial on the part of the Federal Government as to exemption from State water laws.

(8) Nothing in this Act shall be construed as affecting the jurisdiction or responsibilities of the several States with respect to wildlife and fish in the national forests.

STATE AND PRIVATE LANDS WITHIN WILDERNESS AREAS

Section 5. (a) In any case where State-owned or privately owned land is completely surrounded by national forest lands within areas designated by this Act as wilderness, such State or private owner shall be given such rights as may be necessary to assure adequate access to such State-owned or privately owned land by such State or private owner and their successors in interest, or the State-owned land or privately owned land shall be exchanged for federally owned land in the same State of approximately equal value under authorities available to the Secretary of Agriculture:

Transfers, restriction. *Provided, however,* That the United States shall not transfer to a State or private owner any mineral interests unless the State or private owner relinquishes or causes to be relinquished to the United States the mineral interest in the surrounded land.

(b) In any case where valid mining claims or other valid occupancies are wholly within a designated national forest wilderness area, the Secretary of Agriculture shall, by reasonable regulations consistent with the preservation of the area as wilderness, permit ingress and egress to such surrounded areas by means which have been or are being customarily enjoyed with respect to other such areas similarly situated.

Acquisition. (c) Subject to the appropriation of funds by Congress, the Secretary of Agriculture is authorized to acquire privately owned land within the perimeter of any area designated by this Act as wilderness if (1) the owner concurs in such acquisition or (2) the acquisition is specifically authorized by Congress.

GIFTS, BEQUESTS, AND CONTRIBUTIONS

Section 6. (a) The Secretary of Agriculture may accept gifts or bequests of land within wilderness areas designated by this Act for preservation as wilderness. The Secretary of Agriculture may also accept gifts or bequests of land adjacent to wilderness areas designated by this Act for preservation as wilderness if he has given sixty days advance notice thereof to the President of the Senate and the Speaker of the House of Representatives. Land accepted by the Secretary of Agriculture under this section shall become part of the wilderness area involved. Regulations with regard to any such land may be in accordance with such agreements, consistent with the policy of this Act, as are made at the time of such gift, or such conditions, consistent with such policy, as may be included in, and accepted with, such bequest.

(b) The Secretary of Agriculture or the Secretary of the Interior is authorized to accept private contributions and gifts to be used to further the purposes of this Act.

ANNUAL REPORTS

Section 7. At the opening of each session of Congress, the Secretaries of Agriculture and Interior shall jointly report to the President for transmission to Congress on the status of the wilderness system, including a list and descriptions of the areas in the system, regulations in effect, and other pertinent information, together with any recommendations they may care to make.

APPENDIX C

THE BUREAU OF LAND MANAGEMENT WILDERNESS REVIEW PROCESS

To carry out the wilderness mandate of FLPMA, the Bureau of Land Management has developed a wilderness review process with three phases: inventory, study, and reporting to Congress.

Inventory: In the wilderness inventory, the BLM examined the public lands, with public participation, and identified those areas that meet the definition of wilderness established by Congress. These areas were identified as wilderness study areas (WSA's). The inventory was completed by November 14, 1980, in the contiguous Western States, resulting in identification of approximately 24 million acres as wilderness study areas and in elimination from further wilderness consideration of approximately 150 million acres.

Study: Each wilderness study area will be studied through the BLM resource management planning system to analyze all values, resources, and uses within the area. The findings of the study, including public participation, determine whether the area will be recommended as suitable or nonsuitable for designation as wilderness. In practice, determining an area's "suitability or nonsuitability . . . for preservation as wilderness," in the words of FLPMA, means determining whether the area is more suitable for wilderness designation or more suitable for other uses.

Reporting: When the study has been completed, a recommendation as to whether the wilderness study area is suitable or nonsuitable for designation as wilderness is submitted through the Secretary of the Interior and the President to Congress. A mineral survey will be conducted by the Geological Survey and Bureau of Mines for any area recommended as suitable. Reports on all wilderness study areas must reach the President no later than October 21, 1991, and reach Congress by October 21, 1993. Only Congress can designate an area as wilderness.

APPENDIX D

DEFINITIONS

Some of the terms used in this document have specific meanings and are defined as follows:

Domestic Livestock: Animals kept and managed for their products or for breeding purposes, not visitors' animals or administrative livestock.

FLPMA: The Federal Land Policy and Management Act of 1976 (Public Law 94-579, 90 Stat. 2743, 43 USC 1701).

Livestock Grazing Operations: Those operations under permit where the primary purpose is the grazing of livestock for the production of food and fiber. Includes pack and saddle stock used in conjunction with such operations.

Mechanical Transport: "Mechanical transport" means any device for transporting personnel or material with wheels, tracks, skids, or by flotation for traveling over land, water, or snow and is propelled by a nonliving power source contained or carried on or within the device.

Motorized Equipment: "Motorized equipment" means any machine activated by a nonliving power source except small battery-powered, handcarried devices such as flashlights, shavers, Geiger counters, and cameras.

Motor Vehicle: "Motor vehicle" means any vehicle which is self-propelled or any vehicle which is propelled by electric power obtained from batteries.

Multiple Use: ". . . the management of the public lands and their various resource values so that they are utilized in the combination that will best meet the present and future needs of the American people; making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions; the use of some land for less than all of the resources; a combination of balanced and diverse resource uses that takes into account the long-term needs of future generations for renewable and nonrenewable resources, including, but not limited to, recreation, range, timber, minerals, watershed, wildlife and fish, and natural scenic, scientific and historical values; and harmonious and coordinated management of the various resources without permanent impairment of the productivity of the land and the quality of the environment with consideration being given to the relative values of the resources and not necessarily to the combination of uses that will give the greatest economic return or the greatest unit output." (From Section 103, FLPMA)

Naturalized: Refers to a non-native species of plant or animal which is well established in the area as a part of the wilderness ecosystem and which sustains its population without requiring human assistance (such as stocking or reseeding). Non-native species that are not in equilibrium with the wilderness ecosystem (such as those which are increasing their population and displacing native species) are not considered naturalized.

Naturalness: Refers to an area which "generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable." (From Section 2(c), Wilderness Act).

Outstanding: Standing out among others of its kind; conspicious; prominent. Superior to others of its kind; distinguished; excellent.

Permanent Improvement: A manmade structural or nonstructural improvement which will remain at a particular location for more than one field sesson—as differentiated from temporary structures; includes such items as toilet buildings, trails, cabins, signs, fences, vegetative cover manipulation, shelters, and fire grills.

Primitive and Unconfined Recreation: Nonmotorized and nondeveloped types of outdoor recreational activities.

Rangeland Improvements: Any structural or nonstructural improvement which directly affects or supports the use of the forage resource by domestic livestock, such as fences, line cabins, water lines, and stock tanks.

Recreational Livestock: Horses, mules, or burros used for recreational purposes to transport people and/or their supplies.

Solitude: The state of being alone or remote from habitations; isolation. A lonely, unfrequented, or secluded place.

Temporary Structure: Any structure which can be readily and completely dismantled and removed from the site between periods of actual use. It may or may not be authorized at the same site from season to season or from year to year.

Unnecessary or Undue Degradation: Surface disturbance greater than what would normally result when an activity is being accomplished by a prudent operator in usual, customary, and proficient operations of similar character and taking into consideration the effects of operations on other resources and land uses, including those resources and uses outside the area of operations. Failure to initiate and complete reasonable mitigation measures, including reclamation of disturbed areas, or creation of a nuisance may constitute unnecessary or undue degradation. Failure to comply with applicable environmental protection statutes and regulations thereunder will constitute unnecesary or undue degradation.

Visitor Use: Visitor use of the wilderness resource for inspiration, stimulation, solitude, relaxation, education, pleasure, or satisfaction.

Wilderness: The definition contained in Section 2(c) of the Wilderness Act of 1964 (78 Stat. 891). (See Appendix B for its full text.)

Wilderness Characteristics: The definition contained in Section 2(c) of the Wilderness Act of 1964 (78 Stat. 891. (See Appendix B for its full text.)

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